JULY-AUGUST 2003

# PM

## PROGRAM MANAGER

**2003 DEFENSE ACQUISITION UNIVERSITY ALUMNI ASSOCIATION—20TH ACQUISITION SYMPOSIUM**

## Evolutionary Acquisition Strategies & Spiral Development Processes

*Weapons Systems Evolve Naturally from Initial Fielding of Each System*

### ALSO IN THIS ISSUE:

**SIX SIGMA APPROACH**

**INTEROPERABILITY TESTING & THE NEW ACQUISITION GUIDANCE**

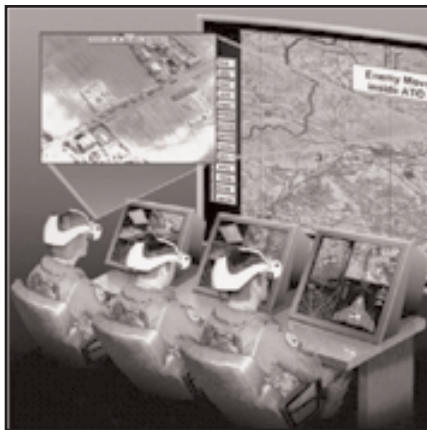**TIN WHISKERS THREATEN RELIABILITY OF ELECTRONICS COMPONENTS**
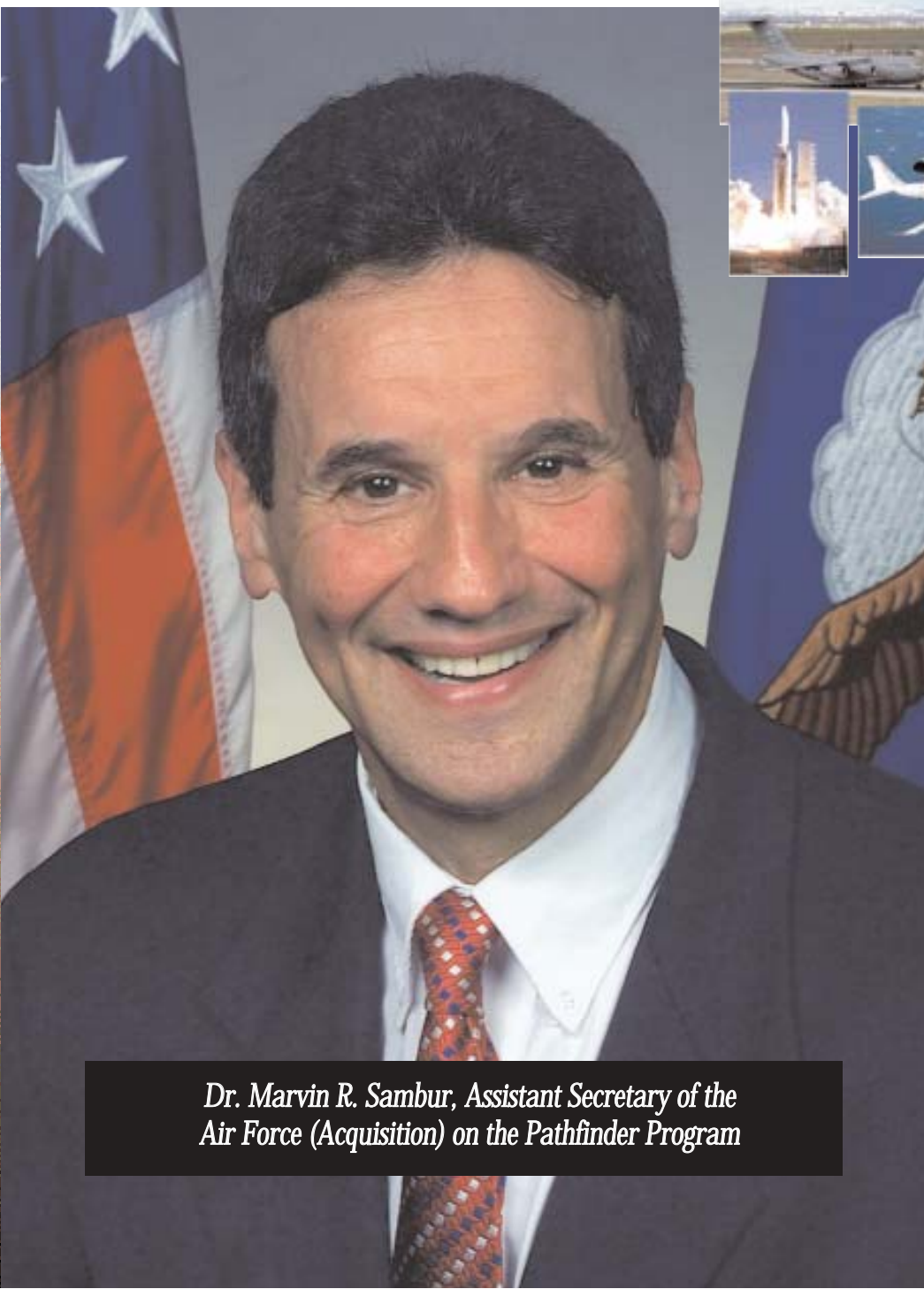
*Dr. Marvin R. Sambur, Assistant Secretary of the Air Force (Acquisition) on the Pathfinder Program*

# PROGRAM MANAGER

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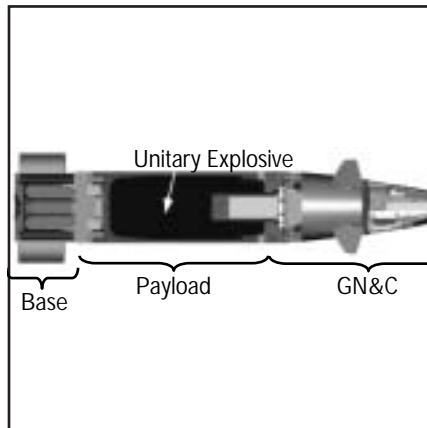
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# Interview with Marvin Sambur, Assistant Secretary of the Air Force (Acquisition)

## Pathfinder Program Testing the Potential of Spiral Arms Development

*"Have you ever noticed how much faster we're able to deliver things when we're at war, how we're able to deliver in months what might otherwise take us 10 years?" Dr. Marvin R. Sambur, Assistant Secretary of the Air Force (Acquisition) recently asked an Air Force audience. He provided the answer, "What do you think the difference is? It's that everyone's talking to one another, all the time."*

The cornerstone of Marvin Sambur's efforts to bring a "warlike mentality" to Air Force acquisition is captured in his initiatives under the banner of "Agile Acquisition." Three Agile Acquisition initiatives—Collaborative Requirements Development, Seamless Verification in Testing, and Technology Transfer—are the foundation for Agile Acquisition and were approved by Sambur in February this year for implementation.

These initiatives aim to get equipment to the field quickly through use of a technique or strategy called evolutionary acquisition. In the following discussion, Sambur responds to a series of questions from *Program Manager* and talks about his efforts to "jump start" these initiatives as tested in the "Pathfinder" programs.

**Q**

*When you started on this job in November 2001, what did you see as your major problems?*



Marty Evans (left), Director, U.S. Air Force Acquisition Center of Excellence (ACE), discusses Pathfinder programs and their application to other Air Force programs with Dr. Marvin Sambur, Assistant Secretary of the Air Force for Acquisition and Air Force Service Acquisition Executive. The discussions took place in Sambur's Pentagon office on Aug. 4.

**A**

Two major problems. The long time it took the acquisition system to deliver new capability to the warfighters; and our credibility—we were perceived as delivering late, delivering less than promised, and at greater costs.

**Q**

*Did you have an answer?*

**A**

I certainly had a challenge. Let me give you some background on the creation

of an initiative nicknamed Agile Acquisition.

Right about the time that I became the Assistant Secretary, the Air Force held a series of senior management meetings in the fall and winter of 2001/2002. We wanted to jump start changes to the acquisition system. Secretary of the Air Force James Roche sought to foster a culture of innovation and reasonable risk taking and gave us some tough goals. He wanted to shorten the acquisition cycle times, i.e., deliver today's technology today; and wanted a flexible system that would allow us to quickly insert new technologies into systems throughout their life cycles. His bottom line was to build credibility with our customers—the warfighters. For me, the question was how to do this. My answer—Agile Acquisition!

**Q**

*What is included in your Agile Acquisition initiative?*

**A**

Agile Acquisition is our strategy to get capability to the warfighter quickly and to build our credibility. It is based on the simple premise of working together—collaboration—among four key groups: the requirers, the technologists, the testers, and the acquirer, who will all improve the system. It consists of three separate initiatives—all requiring close collaboration with these same groups.

**Collaborative Requirements Process**
The first initiative is called "Collaborative Requirements Process." In the past, the warfighters developed their requirements, tossed them over the wall, and we tried to translate their needs into contract documents. We often missed the point and this increased the time to field and test systems, and often left the participants unhappy with the results.

By working together as a team at the outset when requirements are first developed, the acquisition and technology professionals could provide immediate feedback to the requirer on technology and development issues,

> When in a sole-source environment, early contractor involvement should be the norm. Industry can help us to understand the art of the possible and can prevent, to some degree, the temptation to overstate specific requirements.

while the testers would be involved to ensure that what was required could be tested. This ensures that we understand what the testers are really looking for, plus we will be able to provide them with a realistic assessment of our ability to accomplish what they want.

**Focused Technology Transfer**
This leads directly to our next initiative—Focused Technology Transfer. Once we know what the warfighters want, the question to ask and answer is obvious: Is the technology available? The Technology Transfer initiative is designed to closely link research and development efforts in the labs to the specific needs of programs. By fostering a closer working relationship with the labs and the program offices, the labs will understand program needs.

With this understanding, the labs will be able to adjust their projects to directly contribute to delivering military capability to the warfighter. The result we want is to have the labs realign high-priority limited resources to focus on bringing high-value technology to a higher technology readiness level—ready for integration into a new weapons system.

**Seamless Verification**
The final initiative—Seamless Verification—is designed to bring testers in early, to get their advice on testability of requirements and their early involvement in developing a test strategy. And then the key element of Seamless Verification is to remove the seams, at least as it makes sense, between DT [Developmental Testing] and OT [Operational Testing].

As most acquisition people know, the barriers between DT and OT testing were treated as almost "sacrosanct." This limited our ability to learn from what happened. Our approach was to reduce the overlap, which wastes time and resources. While we have to protect the impartiality and integrity of OT&E [Operational Test and Evaluation], much of the DT&E [Developmental Test and Evaluation] effort could be separately evaluated for OT&E purposes—let's remove the seams!

# Pathfinder Programs–Blazing

## Six Ongoing Programs Pionee



### Network Centric Collaborative Targeting

The Network Centric Collaborative Targeting (NCCT) program is an ACTD designed to provide commanders/decision makers with time-sensitive targeting data to make more accurate, quicker targeting and engagement decisions. Using networking principles and distributed processing with common algorithms and common databases, this system will decrease the timelines for detection. Using a spiral acquisition strategy, the Air Force plans to develop an NCCT core capability with demonstrated military utility by FY04. Future spirals will provide an Initial Operational Capability (IOC) by FY07.

U.S. Air Force Image

### Unmanned Combat Air Vehicle

The ongoing X-45 Unmanned Combat Air Vehicle (UCAV) program is a joint Defense Advanced Research Projects Agency (DARPA)/U.S. Air Force effort being conducted in multiple overlapping spirals of increasing capability. The UCAV is to be an affordable weapon system that expands tactical, and perhaps strategic, mission options and provides a revolutionary new element in the air power arsenal to counter fixed, mobile, and unlocated elements of an advanced Integrated Air Defense System (IADS) through preemptive destruction beginning in FY08. It will exploit the design and operational freedoms of relocating the pilot outside the vehicle, while maintaining the rationale, judgment, and moral qualities of the human operator.

Photo courtesy Boeing Media

# a Trail for Others to Follow

## ring Evolutionary Acquisition

### B-2 Radar Modernization Program

The B-2 Radar Modernization Program (RMP) meets the need to develop a radar system in a frequency band where the U.S. government is a designated primary user. The current system cannot interface with primary users due to interference by secondary users. The B-2 RMP is planned for three increments consisting of at least five spirals. Each increment of this program will provide increased capability, including extended range for the B-2 fleet.

Photo courtesy Boeing Media

### Small Diameter Bomb

The Small Diameter Bomb (SDB) program will deliver to the warfighter a small diameter bomb against fixed targets. The acquisition strategy envisioned an evolutionary acquisition and spiral development approach to delivering capability. Boeing and Lockheed Martin are currently competing in the two-year Concept Advanced Development (CAD) phase, with a downselect expected to occur in September 2003. The first capability is planned for FY06 for the F-15E. Future spiral developments will include integration on other aircraft (F/A-22) and capability against moving targets.

Image courtesy Defense Advanced Research Projects Agency

### Global Hawk

Global Hawk is intended to provide all-weather, high-altitude, long-endurance reconnaissance, surveillance, and target acquisition, with near real-time coverage for extended periods in support of military operations. It is designed to operate in low-to-moderate risk threat environments and will provide imagery to existing command and control nodes, enabling enhanced battlefield situational awareness. Building upon a successful ACTD program, Global Hawk planned an acquisition strategy that incrementally delivered increased capability to the warfighter based upon a spiral approach to development.

Photo courtesy Northrop Grumman, Ryan Aeronautical Center

### Distributed Common Ground Station

The Distributed Common Ground Station (DCGS) is a system of systems that will field a worldwide deployable intelligence ground system capable of receiving, processing, exploiting, correlating, and disseminating national, theater, and tactical reconnaissance intelligence data. The current system, operating at capacity, comprises legacy and uniquely developed components. As new intelligence, surveillance, and reconnaissance platforms are deployed, they will stress the current system beyond its means. The program strategy was to modernize with increased capability and deliver a new system quickly (three to four years) through a spiral development strategy. The new system would provide an open, flexible architecture to enable rapid technology insertion, enhance distrib-uted operations, and reduce the system sustainment burden.

U.S. Air Force image
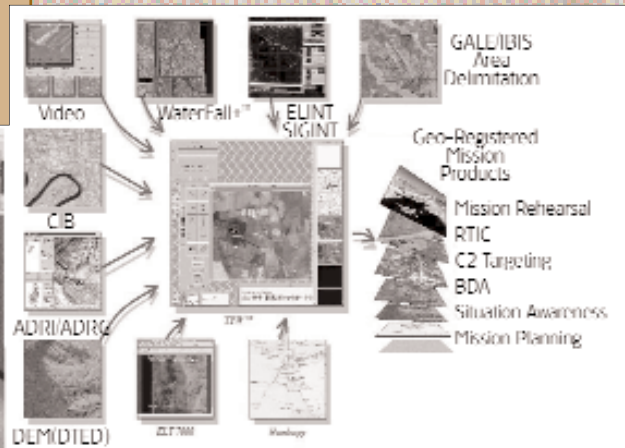
**Q**

*We have heard a lot about the Pathfinder programs. How did they get started?*

**A**

Before I answer that, let me point out that in the past we have used the "big bang" approach—on average it took 10 years or more to deliver a system to the warfighter. Both the Air Force and DoD are moving to replace this approach with an evolutionary acquisition strategy. In this strategy we will deliver incremental capability to the warfighter. This increases the need to "talk" to both the warfighter and the tester, since capability documents will change and testing will need to capture the evolution of the system.

Now back to your question. I believe in testing before buying. We had some good ideas and needed a way to test these initiatives. Thus in March 2002, Pathfinder was created—programs that could blaze a path for others to follow, very much like our Pathfinder forefathers. While we looked at a large number of programs, we finally identified six Pathfinder programs last year to pioneer these initiatives—all with a bottom line goal of building credibility within and outside the acquisition community and reducing cycle time by a ratio of 4:1.

**Q**

*What programs did you select to pioneer your initiatives? And why?*

**A**

We looked at a broad spectrum of programs to truly test the tenets of Agile Acquisition. We started with 13 potential programs as Pathfinders, finally whittling them down to six. These programs covered the spectrum from Advanced Concept Technology Demonstrations (ACTDs), to updates to mature programs, to bombs, to software systems. They were the Unmanned Combat Air Vehicle (UCAV), the Small Diameter Bomb (SDB), Global Hawk, the Distributed Common Ground Station (DCGS), the Network Centric Collaborative Targeting (NCCT), and the B-2 Radar Modernization Program (RMP).



We need to instill an adequate systems engineering foundation within the acquisition process. ... Decisions based on a solid systems engineering approach will ensure our program managers will be better prepared to assess their programs' health and will help to keep programs on budget and schedule.

**Q**

*What did you hope to accomplish in the Pathfinder programs?*

**A**

We adopted a "try it and see if it works" strategy. We were looking for two prime results. First, to foster active, cooperative dialogue between the warfighter, the technologist, the acquirer, and the tester. Working as one team—surprises kept in check. And second, to make collaborative spiral development the way we do business. Our timeline was to use Pathfinder programs to develop and experiment with these new processes (six months); capture lessons learned (six months to one year); and finally, to deploy and institutionalize change (one to two years).

**Q**

*Did you accomplish what you wanted?*

**A**

Bottom line—our goal was to experiment and we met that objective, plus we assembled valuable lessons learned that will help guide future programs.

**Q**

*What did you learn from these programs?*

**A**

This is a long answer! As we expected, warfighter involvement with the acquisition community led to benefits. Three programs—B-2, Global Hawk, and the NCCT—showed the promise of this initiative. The B-2 Program built credibility with Air Combat Command (ACC) by resisting going down the same old requirements path; rather, they created mutual expectations of what was realistically achievable. Again, they did an excellent job of managing both risk and expectations and working with the warfighter to collapse a two- to four-year requirements trade process into nine months.

The formation of HPTs [High Performance Teams] was effective for Global Hawk and NCCT. Results: the update to the Global Hawk moved through the HPT to a final document to the Joint Requirements Oversight Council in six

months—a significant improvement over the one-year plus usually associated with this type of effort.

For the NCCT program, the timing was right to act as a test case for writing the new "capability-based" requirements document. An HPT was convened and successfully wrote an IRD [Initial Requirements Document—now called an Interim Capabilities Document]—in one week. The IRD was approved by the AFROC [Air Force Requirements Oversight Council] on February 20, 2003. We also found that having a dedicated point of contact, in this case a support contractor at Air Combat Command, provided a conduit for the SPO [Special Program Officer] into the requirements community. But I must state a caveat: the individual must have credibility within the warfighter requirements' organization.

**Q**

*One of the troubling issues in acquisition has always been transition of technology from the labs to a program. How well did the tech transfer initiative work?*

**A**

While the collaborative requirements initiative was probably a "double," this was a "home run." Four programs—UCAV, SDB, Global Hawk and B-2—showed real promise. I must also pass kudos along to AFRL [Air Force Research Laboratory] for stepping up to this initiative. They formed a strong partnership with all four program offices and their contractors.

For UCAV, AFRL realigned resources to meet near-term and future needs, specifically for the air vehicle area and for automated aerial refueling to increase range. They also built an integrated technology development and transition plan.

In the SDB program, AFRL went even further and collocated three individuals with the program office. Benefits went both ways. First, the lab had a technology effort called the Small Smart Bomb. Collocating lab personnel from that program into the SPO made it easier to see

## DR. MARVIN R. SAMBUR
## ASSISTANT SECRETARY OF THE AIR FORCE FOR ACQUISITION

*Air Force Service Acquisition Executive*



**D**r. Marvin R. Sambur is Assistant Secretary of the Air Force for Acquisition, Washington, D.C., a position to which he was confirmed by the U.S. Senate on Nov. 8, 2001. He is the Air Force's Service Acquisition Executive, responsible for all Air Force research, development, and acquisition activities. He provides direction, guidance, and supervision of all matters pertaining to the formulation, review, approval, and execution of acquisition plans, policies, and programs.

Sambur has more than 33 years of experience in high-technology program acquisition, management, and engineering, focusing on advanced wireless communications systems, sophisticated satellite payloads, air traffic control systems, and electronic warfare.

Prior to his appointment as Assistant Secretary, Sambur was the President and Chief Executive Officer of ITT Defense, responsible for the management of ITT's $1.5 billion defense sector.

Sambur holds a bachelor's degree in electrical engineering from City College of New York; a master's degree in electrical engineering from Massachusetts Institute of Technology (MIT); and a doctorate in electrical engineering, also from MIT.

In 1999, he received the Golden Apple Award for outstanding commitment to improving public school education for the children of Allen County in Fort Wayne, Ind. Other awards include the Institute of Electrical and Electronics Engineers (IEEE) Centennial Award for excellence in engineering management; induction into The City College of the City University of New York Athletic Hall of Fame; and the Institute of Environmental Management and Assessment (IEMA) Outstanding Leadership Award.

Professionally, Sambur is a member of the Acoustical Society of America, Tau Beta Pi, and Eta Kappa Nu.

opportunities for transitioning technology to the SDB.

These same personnel were also able to piggyback on another lab program that garnered important testing data on SDB components. AFRL received a reciprocal benefit: the close working relationship established with the SPO provided

insight to penetration test data in support of their lab projects.

In addition to collocating personnel in the SPO, the lab focused on specific program needs and dedicated $8 million of FY03 funding for technology efforts. Global Hawk and the B-2 became "preferred customers." The labs match their

capabilities and resources to the program's needs. For the B-2 the labs refocused the technology efforts to provide opportunities for follow-on spirals, along with technical assessment of TR [transmit/receive] modules and AESA [advanced electronically scanned array] producibility.

**Q**

*What about the testing initiative?*

**A**

The old approach had AFOTEC [Air Force Operational Test and Evaluation Command] getting involved with the UCAV program in 2005 when the low observable vehicles would be available. Under this initiative, they joined the UCAV pathfinder team to help identify opportunities for operational assessments during the UCAV tech feasibility and military utility demonstrations.

In the SDB program, some members of the OT community fully embraced the seamless verification initiative. AFOTEC (Detachment 2) assigned a representative to the program office—there is an OT desk in the SDB SPO. The actual operators from the 53rd Test Wing became involved in the program to provide direct feedback/advice on the feasibility of requirements implementation. And even the OSD Live Fire test community embraced the seamless verification initiative. Their goal was to have no unique live fire testing.

Even though The Global Hawk program is still in its early stages, working as a team they were able to apply the seamless verification concepts to the TEMP [Test and Evaluation Master Plan], and it has been approved by all stakeholders.

**Q**

*What problems did the pathfinder programs face? What type of hurdles did you run into?*

**A**

Let me highlight a couple of examples. Like all teams, the NCCT HPT learned that while using an HPT may shorten the writing process, without representation from all stakeholders, the coordination process can drag on. Secondly,

We are used to compartmentalizing things–processing paper in a serial fashion and remaining in our own function. We want to move from compartmentalization to collaboration.

it is important to make the contractor a part of the HPT, if possible. When in a sole-source environment, early contractor involvement should be the norm. Industry can help us to understand the art of the possible and can prevent, to some degree, the temptation to overstate specific requirements. Early involvement also gives the contractor a head start on understanding customer

expectations and what capabilities are important for the system. Finally, not everyone embraces these initiatives. While the senior leaders do, not every staff does.

**Q**

*Did you learn anything else?*

**A**

I expected to discover some impacts from the Agile Acquisition initiatives on the acquisition process, but like any test, you often identify other problems. The test identified problems, specifically, in the implementation of Evolutionary Acquisition strategy.

What happens when you have two competing contractors? The SDB program had this question. The first problem was to keep a baseline to evaluate separate proposals when the Request for Proposal allowed flexibility for the contractors to move program content between spirals. Secondly, the contractors were only allowed limited participation in the requirements generation process, and that was restricted to reviewing the requirements and commenting on their feasibility. However, to guard against giving one contractor an unfair advantage over the other, the program office had to be careful to ensure requirements were not changed as a result of those reviews.

The Global Hawk program had slightly different problems—how to match the production program with the use of approval milestones or decision points like LRIP [Low Rate Initial Production] and Full Rate Production in light of the alignment of a program's spirals. If a program is on a schedule of a new spiral every year, it will not fit into a customary milestone process because of either lead times or production quantities.

Funding and budget stability is a "normal" acquisition problem. But moving to spiral development will challenge how we budget for programs. Some Pathfinders—SDB, UCAV, and Global Hawk—are already impacted by budget instability. And although the 5000 directive specifically allows programs to move into SDD [System Development and

Demonstration] directly from an ACTD, the budget process isn't able to handle that transition very well. This makes it imperative to work closely with the programmers and budgeters in the Pentagon when contemplating this sort of move.

The DCGS program had a test-related success story with the removal of "seams" between testing organizations by combining security and program test and evaluation, which significantly cut costs and reduced time.

There are other benefits, and one that is having the impact we wanted was on the SDB program. Its use of "Commander's Intent"—a clear statement by the leadership that reflected the necessary outcomes of the program—focused answers to questions/approaches introduced by organizations not in the accountability chain. The statement ensured the program remained focused.

Finally, one that I put into the fallout category of collaboration: we learned we had a "hidden" source to help us on the DMS [Diminishing Manufacturing Sources] problem. The labs have the capability to be our "honest broker," evaluating contractor assessments of DMS issues.

**Q**

*What is the status of the Pathfinder Program?*

**A**

It was time to put into practice what we had learned. I concluded the effort and asked the ACE [Air Force Acquisition Center of Excellence] to gather the lessons learned and promulgate them. It was now time to implement across the Air Force.

**Q**

*How will you institutionalize these lessons? What policies will change? When can the Air Force expect changes?*

**A**

The acquisition policy part is easy. We are in the process of issuing a new Air Force Instruction 63-101, which will incorporate the Agile Acquisition initiatives. But these initiatives cover more than core acquisition issues. My staff, particularly the acquisition professionals in the ACE, are working in collaboration with the requirements folks [AF-XOR] and the testers [AF/TE] to jointly develop our three instructions that govern how we perform acquisition. These initiatives need to become a part of the normal process and will have to be tracked to determine their degree of success.

In the ACE, I have put together the right people and the right mix of people to drive real change. This will be the hard part for them—helping to change the culture. We are used to compartmentalizing things—processing paper in a serial fashion and remaining in our own function. We want to move from compartmentalization to collaboration.

**Q**

*That ties directly into our next question. You have indicated in testimony before Congress that you have been working to develop processes and enhance the culture within the Air Force acquisition workforce, so as to institutionalize these changes. What specifically do you plan?*

**A**

Much about what we have talked about has been to identify the impediments to cultural change—to break down barriers between organizations and work collaboratively together. We will establish processes that foster a culture change called "collaboration." Once more, I have tasked the ACE to get the word out, to identify obstacles, and to help remove them. Again, it will be management's responsibility to ensure a focused effort on cultural change and then to institutionalize.

There are other problems that have been identified in the acquisition system that we are also addressing: faulty cost estimates, inadequate systems engineering, and unstable funding. I have addressed the issue of faulty cost estimates by instituting policy changes that will foster credibility within the acquisition community. In the past, we have designed our programs with a 60 to 70 percent confidence level of meeting cost, schedule, and performance goals. In order to be credible to both the warfighters and Congress, I have implemented the use of a 90 percent confidence level in meeting our requirements. This will improve our cost estimating, help budget instability, and increase warfighting capability.

We also need to instill an adequate systems engineering foundation within the acquisition process. Systems engineering is one of the bedrocks of sound management for acquisition programs, as it ensures that contractor-proposed solutions are consistent with sound engineering principles. Decisions based on a solid systems engineering approach will ensure our program managers will be better prepared to assess their programs' health and will help to keep programs on budget and schedule.

As such, I am implementing a process by which all future Milestone Decision Authorities will ensure that future Acquisition Strategy Plans focus attention on good systems engineering. Additionally, I am driving a requirement that systems engineering performance be linked to the contract award fee or incentive fee structures. This link will help ensure the industry will also follow a sound systems engineering approach.

**Q**

*What are your concerns with the realization of your Agile Acquisition initiative?*

**A**

It is premature to declare success until the results of these initiatives are realized. The initiatives enjoyed top cover and visibility. Will the system allow these changes across the board to match the success of the Pathfinder programs? I will personally track the ability to maintain this commitment by all parties during the follow-on period. I am committed to making this work!

**Editor's Note:** A complete overview of each program is available at http://www.safaq.af.mil/ACE (case sensitive).

# Evolutionary Acquisition Strategies and Spiral Development Processes

## Delivering Affordable, Sustainable Capability to the Warfighters

### KENNETH FARKAS • MAJ. PAUL THURSTON, USAF

Many people think of Evolutionary Acquisition (EA) as the new buzzword; however, EA has been in use at least since the early 1990s. With any major change, things take time; as such, we're on the downside of the implementation of EA as not just an alternate strategy, but as the preferred strategy or the strategy of choice within the Department of Defense.

EA was not considered within DoD acquisition guidance documents until 1995, when it was discussed as an alternate strategy to the traditional single-step to full-capability approach. Then in 2001, an EA strategy became the DoD's preferred strategy for acquiring operational needs. This status has carried through to the current DoD acquisition guidance as follows: "Evolutionary acquisition strategies are the preferred approach to satisfying operational needs. Spiral development is the preferred process for executing such strategies."

Additionally, the individual Services have revised guidance and policy. For instance, within the office of the Assistant Secretary of the Air Force for Acquisition, Research, and Development, Dr. Marvin Sambur, on June 4, 2002, issued a memo titled "Reality-based Acquisition System Policy for All Programs," which outlines the Commander's Intent relative to acquisition as follows:

"The **primary mission** of our acquisition system is to **rapidly deliver** to the warfighters affordable, sustainable **capability that meets their expectations**. All actions by any leader, staff, or supporting organizations will support the Commander's Intent."

Further in the memo, Sambur states:

"Evolutionary Acquisition is the preferred acquisition **strategy** for achieving the Commander's Intent. Spiral Development is the preferred **process** to execute the EA Strategy. ..."

## Terminology and Definitions

Although the policy differentiates EA as a strategy and spiral development (SD) as a process, these terms are often used interchangeably. The definitions listed here will clarify how these terms are different yet complementary.

### Evolutionary Acquisition

What do we mean by "Evolutionary Acquisition Strategy"? First, let's break this down into its component parts and look at the dictionary definition:

- *Evolutionary, adv: process in which something changes (develops) into a different and usually better or more complex form.*
- *Acquisition, n: the act of gaining possessions.* [In the DoD we tend to not just gain possessions but to deliver warfighting capability.]
- *Strategy, n: a plan of action.*

Putting these three component definitions together, a dictionary definition would be:

*Evolutionary Acquisition, n: Plan to develop and deliver warfighting capability over time.*

Several working definitions are available to describe EA. Three of the more common definitions follow:

### No.1
"... overarching acquisition strategy that a program can use to develop and field a core (initial increment) capability meeting a valid requirement with the intent to develop and field additional capabilities in successive increments." (Air Force Instruction [AFI] 63-123, EA for C2 Systems, April 1, 2000.)

### No.2
"An acquisition strategy that defines, develops, produces, or acquires and fields an initial hardware or software increment (or block) of operational capability. It is based on technologies demonstrated in relevant environments, time-phased requirements, and demonstrated manufacturing or software deployment capabilities. These capabilities can be provided in a shorter period of time, followed by subsequent increments of capability over time that accommodate improved technology and allowing for full and adaptable systems over time. Each increment will meet a

FIGURE 1. **Evolutionary Acquisition**
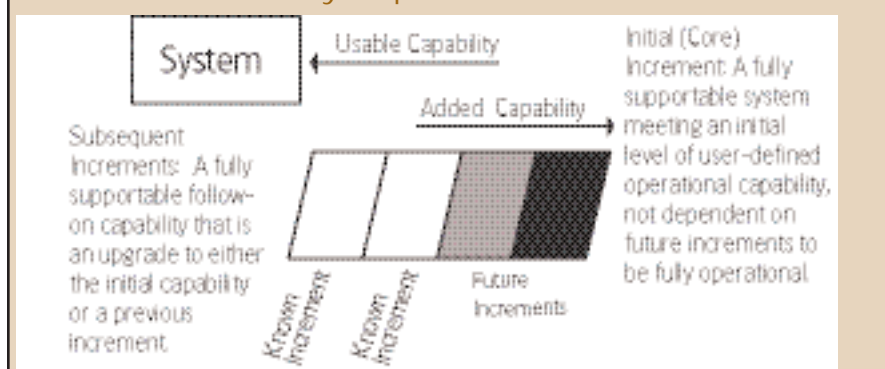
[militarily] useful capability specified by the user …" (Memorandum from the Under Secretary of Defense for Acquisition, Technology and Logistics [USD/AT&L] to the Services, April 12, 2002.)

### No.3

"An evolutionary approach delivers capability in increments, recognizing up front the need for future capability improvements. ... The success of the strategy depends on the consistent and continuous definition of requirements and the maturation of technologies that lead to disciplined development and production of systems that provide increasing capability toward a materiel concept." (DoD Instruction 5000.2, May 12, 2003.)

Three common themes emerge from these definitions. First and foremost, *EA is a* **strategy** *that develops and delivers (or fields) an initial capability and continues the development and production of the system to provide additional capability over time.* Second, EA recognizes up front the need for future enhancements or improvements to the capability. Third, EA recognizes up front the need to plan accordingly for the evolution.

Figure 1 shows an initial usable increment of capability as well as the subsequent increments as added capability. An increment is a distinct set of planned activities supporting the goal of delivering an operational capability to the user. (Note that each increment of capability must meet a defined user need and be fully supportable.) The early subsequent increments may be relatively

known increments, but future increments may be for the most part unknown.

Increments beyond the initial increment accommodate the development and delivery of new capabilities supporting the operational requirements and goals of the system; exploit opportunities to insert new technologies that reduce cost of ownership or accelerate fielding of new capabilities (resulting from technical demonstrations); or refine current capabilities based on user feedback, testing, or experimentation.

Now that we've defined EA as a strategy, let's look at why we should consider using it. Figure 2 shows several different weapon systems. Each of these sys-

Increments beyond the initial increment accommodate the development and delivery of new capabilities supporting the operational requirements and goals of the system; exploit opportunities to insert new technologies that reduce cost of ownership or accelerate fielding of new capabilities … or refine current capabilities based on user feedback, testing, or experimentation.
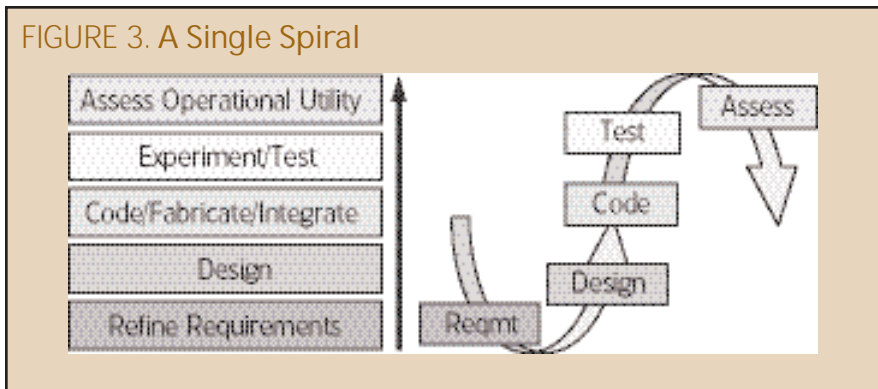


FIGURE 2. **Programs Evolve Naturally**

## FIGURE 3. **A Single Spiral**



tems—whether a major aircraft, a missile system, a complicated software system, or pieces of life support equipment—evolved from initial fielding of the system.

Why do programs evolve? The most prevalent reason: Requirements change! Other reasons why programs evolve:

• Threat changes
• New missions
• New users for the system
• Technology improvements
• Parts obsolescence
• Congressional influence
• Funding cuts

Knowing that a program will evolve, what can be done to leverage this knowledge to better plan the program's evolution? Maintaining an understanding of those items that typically impact a program will provide the best leverage.

For instance, by being aware and connected to the intelligence community, we can better facilitate changes that occur due to a change in the threat environment. By being aware and connected to the science and technology community, we can better facilitate changes that occur due to improvements in technology. Additionally, by being aware of and connected to the user community, we can better facilitate changes that occur due to improvements in how a system is used, how a new user is planning to use the system, or when subsystems begin to fail and parts are no longer available.

Congressional influence and funding cuts are a little more difficult to plan

ahead; however, if a strategy is developed that quickly fields a capability that meets a definite user need, then other potentially negative impacts, such as congressional influence or funding cuts, are minimized. Actually, the opposite may be true. If a system is fielded and proves to be invaluable, then additional missions (capabilities) may be required of the system and additional funding will be provided to support improvements to the system.

A familiar adage reminds us that "the only constant is change." Taking this into account, why not plan for the change? An EA strategy accommodates change, and for the most part welcomes it. We should, therefore, build a strategy that develops and delivers an initial

capability and should lay out the enhancements in an incremental manner to be delivered over time. The enhancements will be planned based on the risk associated with various aspects of the system and the potential for change. Additionally, an EA strategy accommodates changes to future increments and at least allows for some lead time before baselining the increment.

### Spiral Development
Once the strategy is in place to incrementally deliver warfighting capability, a process has to be used to develop these capabilities. The SD process is the preferred process, as identified in the current acquisition guidance. Like EA, several working definitions describe SD. Three of the more common definitions follow:

### No.1
"... is an iterative set of sub-processes that may include: established performance objectives; design; code, fabricate, and integrate; experiment; test; assess operational utility; make trade-offs; and deliver. Other sub-processes may be added as needed. Spiral development characteristics include: a team of stakeholders motivated to collaborate and mitigate risk; a development plan and

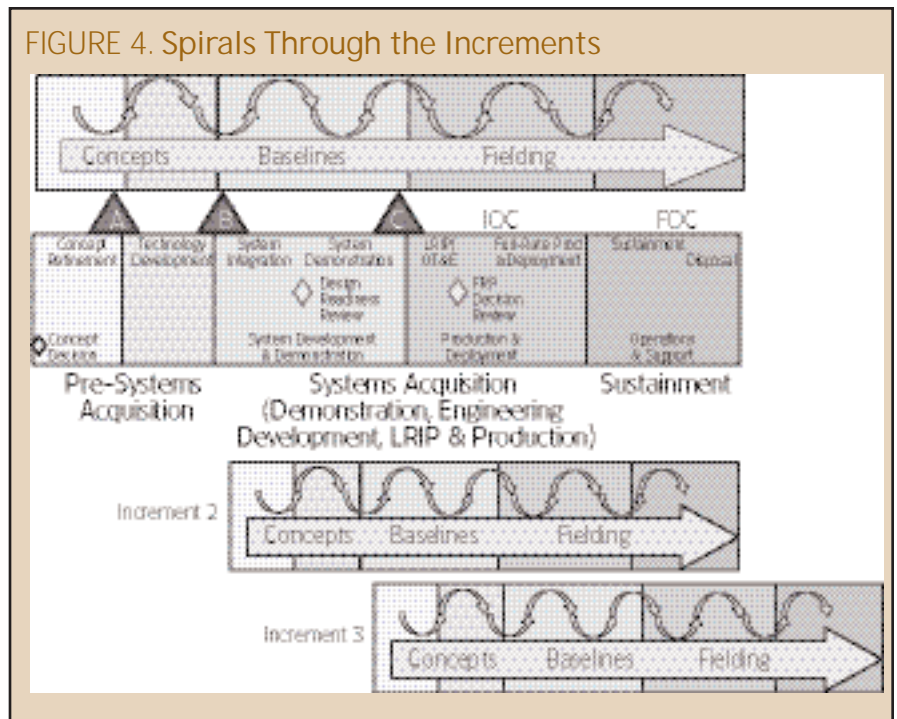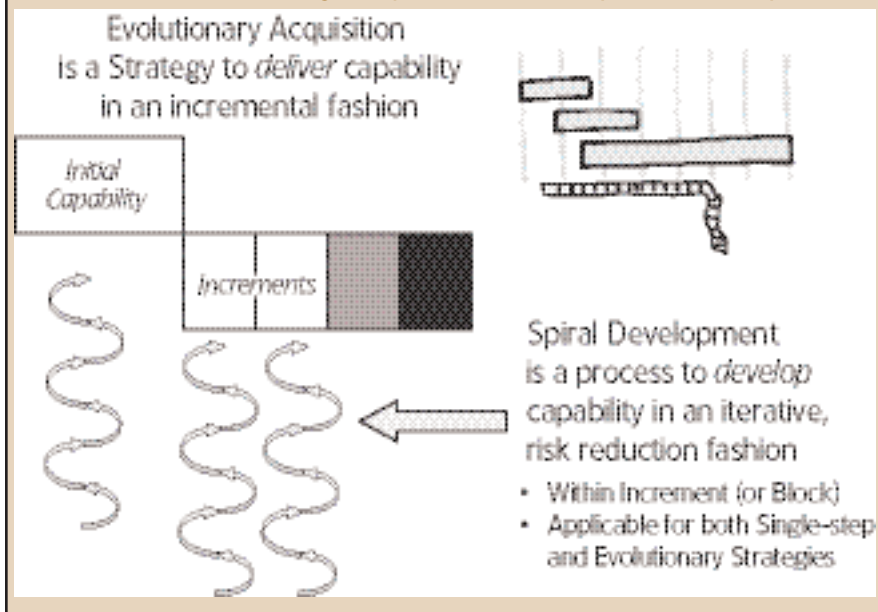## FIGURE 4. **Spirals Through the Increments**

FIGURE 5. **Evolutionary Acquisition with Spiral Development**

Evolutionary Acquisition is a Strategy to *deliver* capability in an incremental fashion

Initial Capability

Increments

Spiral Development is a process to *develop* capability in an iterative, risk reduction fashion
- Within Increment (or Block)
- Applicable for both Single-step and Evolutionary Strategies

decision process; a process to refine requirements; a firm schedule per increment; continued negotiation of performance and cost goals; test/experimentation; and a user decision to field, continue development, or terminate any portion of the increment." (AFI 63-123, Evolutionary Acquisition for C2 Systems, April 1, 2000.)

### No.2
"... iterative process for developing a defined set of capabilities within one increment. This process provides the opportunity for interaction between the user, tester, and developer. In this process, the requirements are refined through experimentation and risk management, there is continuous feedback, and the user is provided the best possible capability within the increment. Each increment may include a number of spirals." (Memorandum from USD/AT&L to the Services, April 12, 2002.)

### No.3
"In this process, a desired capability is identified, but the end-state requirements are not known at program initiation. Those requirements are refined through demonstration and risk management; there is continuous user feedback; and each increment provides the user the best possible capability. The requirements for future increments depend on feedback from users and technology maturation." (DoD Instruction 5000.2, May 12, 2003.)

Each of these three definitions describes SD as a **process**, an iterative process that includes collaboration with the stakeholders/users and continuous feedback in the decision to refine requirements to provide the best possible capability for a specific increment. Whereas EA is the strategy to deliver capability, SD is the process to develop, refine, and ready the capability for fielding.

All three of the definitions include a reference to risk or risk management. Risk is associated with all programs; identifying and managing risk is considered within the SD process. Earlier we mentioned that all programs evolve and that this evolution encompasses changes associated with threat, technology, or user needs. A level of risk is associated with each of these reasons; therefore, SD, if implemented properly, will address the risks associated with concept and technology development, baseline development, and then the fielding of systems.

A single spiral (Figure 3) will include establishing performance objectives; designing; coding, fabricating, integrating; experimenting; testing; assessing operational utility; making trade-offs; and

> A single spiral will include establishing performance objectives; designing; coding, fabricating, integrating; experimenting; testing; assessing operational utility; making trade-offs; and delivering. Each spiral ends in a decision affecting the development of a concept or baseline. This decision will be to continue the spiral process toward developing a concept or baseline…baseline the requirements…field the system, or stop the process…

delivering. Each spiral ends in a decision affecting the development of a concept or baseline. This decision will be to continue the spiral process toward developing a concept or baseline, baseline the requirements (if continuing from concept to baseline development), field the system (if completing baseline development), or stop the process (process not continuing toward a needed capability or capability no longer required).

Per AFI 63-123, the spiral process would be used to develop concepts and technologies into well-defined capabilities, refine capabilities into something ready for fielding, or once fielded, for updates to existing capability.

**Concept Development**: "… matures new concepts, ideas, and technologies into well-defined requirements and initial capabilities. These activities may be separate from a formal acquisition program. Concepts are generated out of operational needs or deficiencies, new technology opportunities, or innovative ideas. The concept, initially a general statement of an objective or hypothesis, is matured through any mix of analysis, rapid prototyping, experimentation, simulation, battlelabs, operational evaluation, and/or exercises. The development process is managed by decisions to repeat, continue, or kill concept spirals and shall consider remaining risks, return on investment, and net benefit. Concepts are developed with operator "hands on" involvement early and often."

**Baseline Development**: "… begins with the requirements and capabilities developed during Concept Development and then refines, integrates, and tests them (capabilities) into a solution ready for fielding. … These activities are part of a formal acquisition program. Acquisition organizations such as System Program Offices will normally lead, manage, and execute this activity with frequent user participation. Baseline Development must include training of an appropriate number of users in anticipation of fielding fully supportable capabilities. … Baseline Development concludes when the user accepts the results of the increment for fielding."

**Fielding and Operations**: "… these activities include fielding … subsystems (systems) from Baseline Development and then operating and supporting them throughout the system's remaining life cycle. These activities are part of a formal acquisition program. An initial portion of a system normally will be fielded with only the core (initial) capabilities of the envisioned final system. Feedback from the system operators is used to improve or change upcoming increments or may alter the envisioned final state of the system."

Simultaneously, the initial and subsequent increments may be in concept and baseline development and fielding and operations. Each increment builds upon or adds to previous capabilities, progressing toward an envisioned final state of the system.

Looking at a single increment in relation to the DoD requirements and acquisition process, one can equate the concept development as that portion up to Milestone B that is essentially the pre-acquisition activity. Baseline development encompasses the activities that begin with the Milestone B decision (when an acquisition program is initiated) up through production and deployment of the capability. The fielding and operations are those activities accomplished during the sustainment phase. This is captured in Figure 4 on p. 12.

## EA and SD—Different but Complementary

The DoD and Air Force guidance highlights that EA is the preferred strategy to acquire weapon systems and that spiral development is the preferred process to implement an EA strategy. Figure 5 on p. 13 represents another way of looking at how EA and SD are different yet complementary.

EA recognizes the need for future enhancements to provide capability. An EA strategy allows for the inclusion of new technology, changes in users' needs, and lessons learned as the system progresses from the initial increment through the full fielding of a system. SD is the process to reduce the various risks associated with acquisition of a weapon system beginning with initial fielding of an increment. Concept Development reduces the risk associated with concepts and technology. Baseline Development reduces risk associated with integration of technologies and preparation for production of units. Once a system is fielded and lessons learned captured from using the systems, the opportunity is there to implement improvements to the system in subsequent increments.

**Editor's Note:** The authors welcome questions or comments on this article. Contact Farkas at Kenneth.farkas@afit.edu or Thurston at Paul.thurston@afit.edu. For more information on EA and SD, go to the EA Community of Practice Web site at https://afkm.wpafb.af.mil/ASPs/ACQ/EntryCoP.asp?Filter=AS-01.

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# Interoperability Testing and the New Acquisition Guidance

## Joint Interoperability Test Command Embraces the Ideals

DENNY F. BEAUGUREAU • CLAYTON K. HASHIMOTO •
RANDON R. HERRIN

O n Oct. 30, 2002, Deputy Secretary of Defense Paul D. Wolfowitz cancelled the existing defense acquisition guidance documents DoDD 5000.1, DoDI 5000.2, and DoD 5000.2-R. In his memorandum, Wolfowitz stated that his objectives were to foster efficiency, creativity, and innovation, and to streamline mandatory acquisition procedures and processes to meet warfighter needs. The interim guidance directs that "continuous examination and adoption of innovative practices" be encouraged and that spiral development be the preferred process in any evolutionary acquisition strategy. The interim guidance also provides for no more than two levels of review between the program manager (PM) and the milestone decision authority (MDA). This will likely reduce the PM's accountability reporting responsibilities and allow more time for program management.

Many in the acquisition community are awaiting the final guidance, which is to be included in documents jointly published by the Director, Operational Test and Evaluation (DOT&E), the Assistant Secretary of Defense for Networks and Information Integration (ASD NII), [previously Command, Control, Communications and Intelligence (ASD C3I)], and the Under Secretary of Defense, Acquisition, Technology and Logistics (USD AT&L). The anticipated changes will prove particularly interesting for



Phyllis Anderson describes aspects of a Tactical Data Link Network to JITC Deputy Commander Denny Beaugureau, who comments that "early and continuous involvement of JITC and the existence of joint Interoperability Key Performance Paramaters (IKPPs) and Information Exchange Requirements (IERs) are key to executing a successful and substantive interoperability test."

any major automated information system (MAIS) or major defense acquisition program (MDAP) PM whose program has ties to weapons systems or command and control systems. [*Editor's Note*: *Since this article was written, the new acquisition guidance documents have been published and several key DoD interoperability certification policy documents continue to be revised, but article contents are still valid.*]

## Many "Old" Requirements Still Apply

In the meantime, a number of the requirements from the superseded 5000-series documents still apply to the operations of the acquisition community. Modeling and simulation (M&S), for example, are still to be used throughout the concept and system development phase and to be integrated in all testing activities. Simulation-based ac-

*Beaugureau, a retired naval officer, has 13 years' experience dealing with interoperability and is currently the JITC deputy commander. Hashimoto is a senior communications-electronics engineer with JITC. He has directed significant conformance, standards development, interoperability, and operational tests undertaken by the JITC. Herrin is JITC's Combat Systems branch chief, Fort Huachuca, Ariz. A former Air Force officer, he has more than 23 years of NSS and ITS research, development, test and evaluation, and acquisition experience.*

quisition (SBA) principles, along with performance and knowledge-based concepts, are still required. The use of integrated product teams and integrated joint architectural views, and emphasis on post-deployment sustainment activities are also included in the interim guidance.

A program's requirements for reviews and milestones have not changed and may, in fact, have increased with iterative demonstrations, assessments, and production decisions within the evolu-

The 9,500-foot-high Huachuca Mountains provide a dramatic backdrop for a variety of JITC test shelters and antennas, including high-gain spiral SATCOM UHF antennas, line-of-sight Army-Navy TRC-170 antennas, and a 20-foot parabolic Army-Navy transportable SATCOM-85B antenna.

tionary acquisition process. Changes in the requirements documentation include replacing the mission needs statement (MNS) and the operational requirements document (ORD) with an initial capabilities document (ICD) prior to Milestone A and with a capabilities development document (CDD) prior to Milestone B. The capabilities production document (CPD) is now required after critical design review (CDR) in the system development and demonstration phase, which precedes Milestone C and the production and deployment phase. And finally, meeting information assurance and interoperability objectives re-

mains essential to the fielding of any program having ties to a national security system (NSS) or an information technology system (ITS).

## Expanded JITC and Testing Community Involvement

The newly revised acquisition process gives the testing community—a key element of the acquisition force—the opportunity to take the initiative and become an active participant in any phase of the acquisition cycle from concept exploration to production and deploy-

ment. The Joint Interoperability Test Command (JITC), historically associated with interoperability certifications, is taking advantage of this opportunity to ensure that it is involved early on and remains involved continuously throughout different aspects of the acquisition cycle. (See next pages "Inside the Joint Interoperability Test Command" for an overview of JITC's charter and multifaceted role in support of the acquisition process.)

For years now, JITC has been implementing many of the new requirements in Wolfowitz's guidance. Although JITC

has been mistakenly associated with technical interoperability testing and certification alone, we have, in reality, always looked at interoperability as consisting of three primary factors—people, equipment, and procedures—that are similar to the current joint community emphasis on all aspects of the doctrine, organization, training, materiel, leadership, personnel, and facilities (DOTMLPF) concept and its effects on

**Testing organizations must be involved early in the concept exploration phase of a program to ensure that changing requirements are consistently evaluated and cross-referenced up to and through the production and deployment phases.**

interoperability. JITC considers interoperability as more than the exchange of critical information between two military service systems. Vital to interoperability is a holistic approach that synergizes training, procedures, terminology, and joint operational implementation of systems among the different military services and federal agencies.

JITC is the only DoD agency mandated and authorized to certify joint interoperability of NSS and ITS programs to the Joint Staff. In addition, JITC is the operational test agency (OTA) for joint NSS and ITS programs developed by the Defense Information Systems Agency (DISA) and other joint agencies. We provide DT services and serve as the responsible test organization for various program offices. As such, we plan, direct, and execute a variety of T&E activities outside the bounds of formal DT and OT.

JITC's charter responds to the warfighter in a variety of ways. We routinely provide on-the-spot evaluations of problem areas and viable mission-oriented solutions for the combatant commanders during exercises and contingency operations. We can also reconstruct and remotely emulate tactical and strategic NSS and ITS operational architectures in test beds and laboratories to address and resolve interoperability issues from around the globe.



FIGURE 1. **Direct (DISA) and Indirect (Joint Staff and DOT&E) JITC Reporting Structure**

JITC is a direct reporting unit of DISA, the agency responsible for information technology and for centrally managing major portions of the global information grid. As DISA's OTA, we respond to the Office of the Secretary of Defense (OSD) Director of Operational Test and Evaluation (DOT&E). The DISA director reports to the ASD NII. In addition, the Chairman of the Joint Chiefs of Staff may task the DISA director to assist the four military services, combatant commanders, and various DoD or federal agencies (Figure 1).

JITC is characterized by several unique roles in support of DISA and the warfighter (Figure 2). As well as the OTA for DISA-managed programs, we also serve as the OTA for other DoD agencies, such as the Defense Logistics Agency, the Defense Finance and Accounting Service, and the Defense Commissary Agency.

As the only non-service element of the Major Range and Test Facility Base (MRTFB), JITC deals directly with vendors to test and certify their products on a reimbursable basis. The result of this early involvement is usually the deployment of more effective systems at lower costs. A current example of this is our work with the

electronic business/electronic commerce (EB/EC) program. Since 1998, we have been assisting defense contractors who do business electronically with the DoD by pre-validating data and injecting them through a test environment similar to the operational environment. We also assist government users in transitioning to new electronic systems.

With a broad range of testing expertise (see sidebar, p. 20) and dedicated test bed facilities, the global reach of DISA and JITC spans the entire spectrum of DoD, federal government, commercial industry, and allies in support of C2, intelligence, and defense acquisition and logistics excellence initiatives. Because of the large number and diverse types of NSS and ITS hardware necessary for testing, JITC conducts a significant amount of testing in a distributed environment. We have incorporated a risk mitigation network to provide the capability to test systems with minimal impact to operational networks. Many of our test beds are currently linked to other service and DoD agency test beds. One of our most active distributed networks supports C2 TDL testing for Joint Theater Air and Missile Defense (JTAMD) (Figure 3). JITC can also link to the Combined Federated Battle Lab Network for the distributed interoperability assessments of non-U.S. equipment and systems.

The Joint Distributed Engineering Plant (JDEP), a DoD- and service-funded, DISA-managed, JITC-supported initiative, is intended to meet the development and testing challenges of supporting knowledge-centric warfare based on joint task force interoperable system capabilities. JDEP facilitates the replication of joint operational environments through the use of existing distributed test capabilities across DoD and industry, creating a true DoD enterprise infrastructure to support developers, testers, and warfighters in addressing mission area interoperability issues. JITC operates as the JDEP coordination and technical support organization; in this capacity, our functions, in partnership with JDEP users, include infrastructure investments programming, event planning, and execution. JDEP's maturation and success will ultimately depend on the cooperation of the developer, tester, and user communities, along with an ability to be responsive in solving warfighter interoperability challenges.
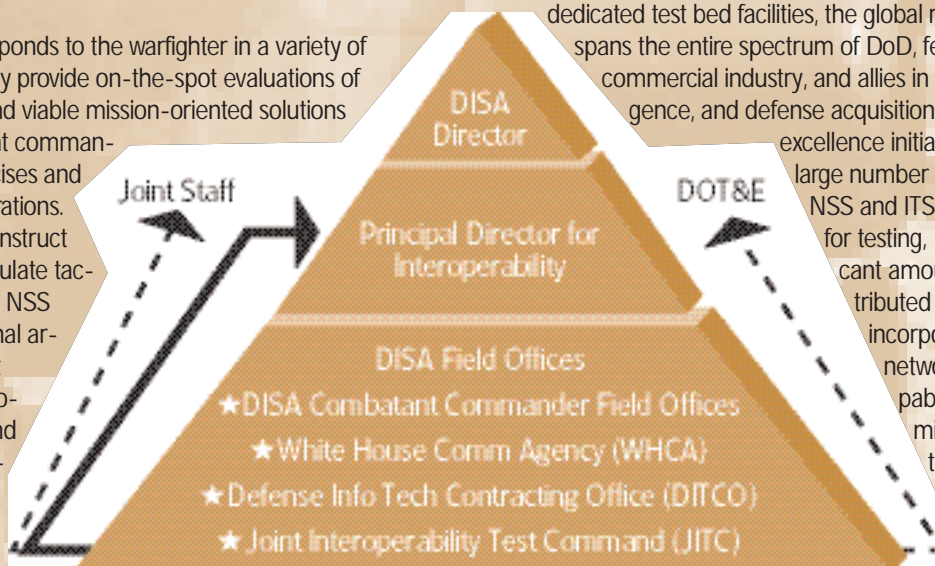
FIGURE 2. **JITC's Unique Warfighter Roles**

DoD's sole joint interoperability certifier

Operational Test Agency for many DoD elements

Major Range & Test Facility Base (MRTFB) element

Executive Agent for various tests (NIMA, EKMS, CDL, among others)



FIGURE 3. **Tactical Data Link Distributed Network Used for Joint Theater Air and Missile Defense Testing**

The importance of this is clearly illustrated by the following experience. A few years ago, in a joint exercise supported by JITC, a weapons controller of an anti-missile weapon system from one service used the command "terminate" to stop on-going and defensive action. In the course of the exercise, JITC discovered that the battery commander for another air defense unit (and a different service) used the same command, "terminate," to shoot down any incoming track, whether identified as friendly or not. Confusion over the different interpretations of the term could have had serious friendly fire repercussions in a hostile environment involving joint forces.

### The Interoperability Testing Process

For the past seven years, JITC has been active in validating and verifying program and system requirements in collaboration with the Joint Staff (JS). To ensure successful developmental testing (DT) and operational testing (OT), all involved must fully understand what is required in order that the product or system, when developed and fielded, performs its operational functionalities and capabilities as the user expects. With full definition and understanding of the requirements, testers can develop criteria to evaluate them.

Establishing the interoperability testing process is nearly identical. Testable requirements associated with the interoperability, functionality, and capability of a product or system interfacing with another product or system must be validated and evaluated under operational conditions. Central to the interoperability requirements validation phase is the establishment of interoperability key performance parameters (IKPPs) and information exchange requirements (IERs). DoD interoperability certification policy document changes are incrementally replacing IKPPs with "Net-Ready" KPPs (NR-KPPs) and IERs with key interface profiles (KIPs). To facilitate the incremental, evolutional fielding concept, interoperability requirements in the form of IKPPs/NR-KPPs and IERs/KIPs must be tested and evaluated using M&S tools, prototypes, low
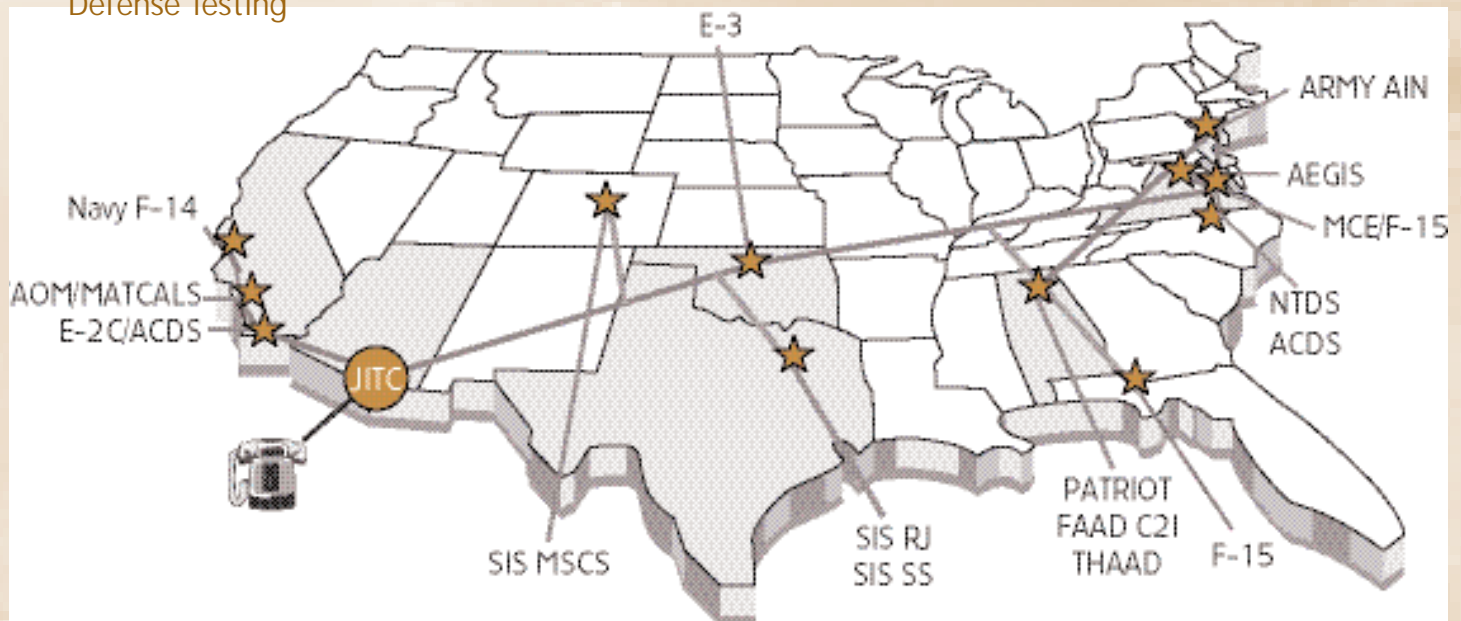
rate initial production (LRIP) items, and finally with the full-rate production-deployable versions. Following those efforts, interoperability evaluations must continue with post-deployment enhanced product releases beyond full operational capability (FOC).

### Life Cycle Involvement

In line with the new acquisition guidance, testing organizations must be involved early in the concept exploration phase of a program to ensure that changing requirements are consistently evaluated and cross-referenced up to and through the production and deployment phases. In an approach similar to the involvement with requirements, JITC's capabilities extend from concept exploration (by means of M&S) and evaluation of engineering prototypes, to standards and product conformance testing, to more rigorous hardware-in-the-loop (HWIL) evaluations. All of the preceding eventually lead to operational tests and evaluations (OT&Es) complemented by evaluation data from live field exercises, demonstrations, and contingency support.

The complexity of test activities parallels product maturation phases where more M&S is used early on during initial testing events, and environments (for example, laboratory conditions, HWIL evaluations) are controlled and easier to duplicate. As the systems and products approach their fielding decision milestone, test events evolve and expand to emulate more realistic operational environments. Since these environments will be harder to control, reduced M&S involvement and dependency on stimulators and simulators, as well as considerably more human participation are needed. Involvement of test organizations from concept development to final deployment assists in the early identification and correction of problem situations. It is this early and entire life cycle involvement concept that test organizations should adhere to and PM offices adopt.

### Successful Endeavors

For JITC, the tactical data link (TDL) area is one prime example of the life

cycle involvement concept in action. We have an active TDL test program that starts with initial HWIL platform interoperability evaluations of Link 11, 11B, and 16 messages. These same platforms are then evaluated during complex live exercises or demonstrations where the message formats are tested in an operational environment.

Another example of successful continuous and evolutionary developmental and operational test activities is the Defense Message System (DMS) program. By JITC involvement early in DT, we were able to complete nearly 35 percent of the OT activities in the DT, thereby reducing cost and test time. We were also actively involved with the requirement generation process of DMS. The initial requirements were not well defined, but with our input, they evolved into testable criteria for functionality and capability that were adapted to meet each incremental fielding phase. JITC's continuous and early involvement contributed significantly to the successful testing of both the TDL and DMS programs.

### Enhanced Risk Management
Risk management is a critical PM responsibility, and like all PM responsibilities, it involves trade-offs. Many—but unfortunately not all—PMs have learned that early and continuous involvement of testing organizations greatly minimizes risks and ensures that their programs provide operational utility.

While the test community can be instrumental in reducing risk and ensuring successful achievement of program objectives, part of the process entails trading off cost, schedules, and resources against confidence levels. Any test program generally involves an investment of time and resources (people, money, facilities, etc.). The key to managing risk is achieving a balance between sufficient testing (investment) and level of confidence. To determine that a command and control (C2) system is ready for guaranteed risk-free fielding, all system functionalities must be tested against every conceivable peacetime, transi-

tional, and wartime scenario. Obtaining such an exceptional level of confidence requires endless testing of functions and countless iterations at significant time and program costs. Normally a trade-off is established to balance affordable confidence against acceptable risk. However, any risk of failure that threatens the lives of our servicemembers or jeopardizes the ability to support critical operational missions must be thoroughly tested.

**Many—but unfortunately not all—PMs have learned that early and continuous involvement of testing organizations greatly minimizes risks and ensures that their programs provide operational utility.**

JITC uses a "test-for-success" concept as a guideline. Developers are encouraged to participate in test planning and testing activities. This cooperation frequently allows immediate identification, development, and implementation of needed fixes, and often reduces the overall test time and cost. To ensure affordable confidence, both the developer and the user must agree, prior to test, on the amount of testing necessary to determine if the risk of fielding a new system is offset by that system's demonstrated capabilities.

### Joint Interoperability: an Increasingly Urgent Priority
The need for joint interoperable command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) capabilities has never been greater. World events have amply demonstrated that warfighting using network-centric command and control has become both the norm and the key to dominating the information battlespace of the 21st century. Joint interoperability continues to be an increasingly urgent priority for DoD as a direct consequence of forward-looking warfighting doctrine that mandates extensive joint, combined, and coalition operations. These conditions represent significant challenges to the weapons system development and testing communities, and call for a flexible, responsive, cost-effective, reliable, and reusable testing architecture that can be employed to develop interoperable systems that assure dominance of the information battlespace.

In a perfect acquisition program world, there would be an infinite amount of time and an inexhaustible supply of resources available; requirements would be clearly stated and understood; and PMs would implement and field every program on schedule with the highest levels of confidence and the least amount of risk. We live in the real world, however, where the opposite is all too often the case. Trade-offs are essential, requirements are evolving, technology is advancing, and resources are limited. The guidance outlined by Wolfowitz has provided an opportunity for test organizations to be equal participants in the already challenging acquisition process. Engaging the test organization early as an equal partner results in less risk, enables PMs to make more timely and informed decisions, and creates greater confidence that products and systems will be fielded as designed.

**Editor's Note**: The authors welcome questions and comments on this article. Beaugureau can be reached at beaugurd@fhu.disa.mil, Hashimoto at hashimoc@ncr.disa.mil, and Herrin at herrinr@fhu.disa.mil.

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CHRISTINA CAVOLI

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The vision of the DAUAA—to be an association that brings together the best leadership and management resources for improving defense systems acquisition—drives the organization of the annual symposium, now celebrating its twentieth year. Through keynote speakers, alumni presentations, workshops, and panel sessions, this year's symposium sought to bring to life the policies and emerging practices of evolutionary acquisition (EA) by presenting DoD, industrial, and congressional leadership examples to attendees. The symposium also invited members to attend the annual Acker Award Ceremony, DAUAA's most prestigious award, and the annual anniversary luncheon and Charter Member recognition ceremony.

*Cavoli is a freelance writer for* Program Manager *magazine and also publishes OSD's* Acquisition Today *newsletter.*

> **"Managing a program with spiral development is similar to driving a car at night with headlights. It is critical to know what's ahead, up close; as in spiral development, the details of what's next are more important."**
>
> *—Dr. Glenn Lamartin Director, Defense Systems OUSD(AT&L)*

The concept of EA was examined from top to bottom: from forecasting the potential of EA and providing concrete, successful examples of EA in action; to outlining the remaining barriers, both externally and internally, that can hinder EA from achieving successful implementation; and to advising on how to overcome such obstacles. Workshops were offered to cover important initiatives such as interoperability for future combat systems, DoD initiatives for software productivity, and the defense-wide information assurance initiative.

### Evolutionary Acquisition—Taking a Three-Pronged Approach

Dr. Glenn Lamartin, Director, Defense Systems, OUSD(AT&L), provided the opening keynote address. In his speech, "Evolutionary Acquisition in Context," he referred to one of former USD(AT&L) E.C. "Pete" Aldridge's five goals for the AT&L workforce: *to achieve credibility* within the business community and to establish a context for decision making that incorporated a joint, mission-centered philosophy.

Lamartin reminded the audience that the realities of our current world provoke and insist on changes in the way business is done. "Can we really rely on the luxury of a six-month buildup to the next war?" asked Lamartin. The current nature of changing threats demands that when any system deploys, it does so with confidence and interoperability.

To meet the ever evolving needs, Lamartin presented a new model. He suggested thinking of capability in terms of a three-pronged approach: an oper-

ational view (what do we need?); a systems view (what do you want to do what?); and a technical view (the no-kidding, engineering "how-to"). Unlike previous models, this approach is not chronological, but a continual collaborative effort. Success, he said, hinges on the continual flow of communication between the three areas in all directions to keep the effort on track.

## Strategic Direction

This model, coined as "joint integrated architecture," also takes a new approach to requirements development. Instead of the bottom-up, stovepipe approach to requirements generation, the new model suggests turning the old process on its head. Under strategic direction, the process begins with the stated goals of senior leaders and administrators and it flows down to the military. National military strategy asks what the force is required to achieve; the joint vision asks what the force is expected to become; and the joint concept of operations asks how, operationally, the tasks can be accomplished and the vision realized.

## First Increment May Not be Final Product

Evolutionary acquisition assists this process by shortening cycle time and delivering useful capability to the warfighter with the understanding that the first increment may not be the final product and can be expected to improve over time—to "evolve." Understanding that evolutionary process deters programs from becoming hopelessly overloaded before deployment, a process Lamartin likened to an overloaded bus: "people sticking out of every window, too much stuff stacked on top—because everyone believes that this is the only bus that is going to be here any time soon. EA means that another bus is coming; there's no need to overload every bus."

## Benefits of Allowing Capability to Evolve

EA also offers the possibility of a shorter Test and Evaluation (T&E) cycle time, when used correctly. By allowing capability to evolve in successive increments, the entire package should not undergo T&E with every issue; only the new or

"Given the large scope of the work and the size of the Defense Contract Management Agency, changing to truly 'customer-focused' contract management necessitated true, gut-changing transformation."

—Sallie Flavin
*Deputy Director, Defense Contract Management Agency*

altered aspects need be evaluated, decreasing the turnaround time.

## Approaching EA From Two Perspectives

EA must also be approached from two perspectives. An incremental development envisions what the end stage will be, and achieves that goal through incremental stages. Spiral development knows the desired direction, but the full potential may be unclear; as the increments progress, feedback from the user,

updated technology, and other changing environmental factors contribute to how the final stage will appear.

## Challenges to Implementing EA

In envisioning spiral development, some of the challenges to successful implementation of EA are clear: How can realistic cost estimates for spiral development projects be established? How can program managers arrange expectations to unfold through a period of time, rather than front-loading everything at the beginning of a program? Lamartin suggested an approach that focuses on a fully funded sound estimate for the first increment, then a rough estimate for the next increment, and an even hazier "wedge" for successive future increments—a "difficult cultural shift" that will require time and training.

Lamartin provided another analogy to clarify his meaning: Managing a program with spiral development is similar to driving a car at night with headlights. It is "critical to know what's ahead, up close; as in spiral development, the details of what's next are more important." The program manager, he said, must accept that the future continues, ahead, along winding roads, and over hills; but, rather than try to pinpoint that unknowable section of road, "with focus and trust, clarity will come with time."

## Transforming to a Customer-Centered Culture

Sallie Flavin, Deputy Director, Defense Contract Management Agency (DCMA), offered a view of how her organization has transformed bureaucratically driven procedures into proactive, customer-oriented approaches. Over 11,000 acquisition professionals, dealing with over 320,000 contracts, work for DCMA; the agency focuses on bringing awarded contracts to fruition.

Given the large scope of the work and the size of the agency, changing to truly "customer-focused" contract management necessitated "true, gut-changing transformation," said Flavin. "Transformation is necessary in response to external and internal pressures." The shift

to a customer focus brought to the forefront ideas of entrepreneurship, creativity, and the idea of regarding directives and regulations as guidance, not prescriptive instructions.

## DCMA and *OneBook*

Flavin described the shift at DCMA as a significant cultural change. Previously, a regulatory system had evolved in which the system drove the action, rather than the reality of a particular contract. A large collection of regulations, known as the *OneBook,* had become the ubiquitous source for dictating how all business was conducted; the *OneBook* ruled all the processes, but ultimately became focused more on process than on the actual end result.

When Flavin arrived at DCMA, there were 29 established metrics in place. "How can anyone know what is important or essential in that mix?" she asked.

Flavin emphasized the significance of the cultural shift necessary to move away from established procedures like the *OneBook.* Such compendiums are the result of a great deal of hard-earned wisdom and experience, Flavin said, and such material should not be ignored or discarded. Nonetheless, she added, the *OneBook* must be considered guidance, not prescription. Given the diverse nature of operations around the globe in disparate fields, she noted, it is almost impossible to superimpose a static procedure that can satisfy the needs of every situation, every time.

## A New Model

The new model, "A Customer-Centered Culture," expresses a new idea. Instead of focusing on process, the model begins with the outcome, and then figures out what must be done to achieve that desired outcome. The *OneBook,* Flavin explained, then becomes a source of guidance rather than the overarching structure influencing the process. The model moves from *responding* to *anticipating* customer needs.

An example Flavin described of DCMA's success under the new ap-



"The opportunity exists for the DoD to engage with Congress, to communicate through reports, and to show Congress what works and what doesn't."

—*Jonathan Etherton*
*Vice President, Legislative Affairs*
*Aerospace Industries Association of America (AIA)*

proach is Wide Area WorkFlow (WAWF), a system for performing electronic acceptance and invoicing on DoD contracts. To date, over 5,000 employees have been trained and over 1,700 contract trading partners exist. Over 40,000 transactions have been successfully completed under the new system. Under WAWF, the percentage of on-time payments has risen to an impressive 99.9 percent; interest per million paid has plummeted from the non-WAWF average of $294 to 3.6 cents.

## A Congressional View of Evolutionary Acquisition

To provide a view of EA from outside government and industry, an address on the "Congressional View of Evolutionary Acquisition" was presented by Jonathan Etherton, Vice President, Legislative Affairs, Aerospace Industries Association of America (AIA). A former longtime staff member of the Senate Armed Services Committee, Etherton gave the symposium a concise view of the congressional role in dealing with EA.

## Interest and Reaction

The congressional response to EA, according to Etherton, can be boiled down to interest and reaction: Congress, while interested in the potential that EA represents, seeks to understand how it will maintain its oversight role and figure into new, streamlined DoD processes.

In the budgets of fiscal 2002 and 2003, Congress has sought to set boundaries and define EA and spiral development. Congress seeks a blueprint that ensures that the DoD can accommodate current law and congressional oversight while implementing new concepts. As an example, Etherton cited section 803 of the fiscal 2003 budget, which authorized spiral development but requested that Congress receive a report that depicted how this new concept would work within existing cost and control settings, with the first report due by September 2004.

Such reports, Etherton asserted, were a method for Congress to solicit feedback about questions and concerns that exist about DoD transformation. Etherton emphasized the need for DoD officials to respond in a timely and cooperative fashion to congressional requests for such feedback and periodic reports as a method of ensuring that Congress remains supportive of transformation goals while remaining assured of the coexistence between the new concepts and existing requirements.

## U.S. Industrial Base for DoD Critical Components

Etherton added to his recommendation a cautionary note concerning future con-

gressional tenor: he noted that the House has currently solidified an intense focus on establishing provisions that establish a U.S. industrial military base that is entirely self-sufficient and provides a domestic source for all critical components for DoD systems. The "substantive content" of such systems would increase from the current content of 50 percent American-produced content to 65 percent, and can no longer include any other country outside of the United States.

Such an approach could significantly increase the burden to defense contractors, Etherton stated; as costs inevitably spiral upward, the budgetary capability for DoD transformation could be diverted. If Congress adopts such a resolution, it could have a major impact on the DoD to implement new ideas such as EA.

## A Reasonable Balance

As a final observation, Etherton advised that the DoD find a reasonable balance between streamlining and the congressional worry about involvement in oversight: "The opportunity exists for the DoD to engage with Congress, to communicate through reports and to show Congress what works and what doesn't." He cautioned that without reliable, consistent feedback to Congress, DoD could face the "political backlash" of being held accountable when something goes awry and the "mandate of oversight" may appear to have failed. In this final recommendation, Etherton urged that DoD leaders be forthcoming with Congress in providing feedback.

## EA in Practice—F-18 Hornets

Navy Rear Adm. (Sel) Jeffrey Wieringa, the self-described "poster child for evolutionary acquisition," gave a presentation on the successful evolution of the F-18 Hornet, a fighter plane that has evolved from its first inception as the premier digital plane in the 1980s to one of the most sophisticated warfighters of current times. [See p. 50, May-June 2003 *Program Manager*.] While every evolution of the Hornet contained new technologies and improvements, Wieringa pointed out that each iteration built upon previous successes; the latest edition, the SuperHornet, took 90 percent of its avionics suite from the model of its predecessor.

Wieringa underlined that effective communication is mandatory for successful

DAU Commandant Army Col. Ronald Flom displays the raffle prize—a model of an RAH-66 Comanche helicopter manufactured by The Boeing Company.



Raytheon Chairman and CEO Daniel P. Burnham (right) accepts the 2003 David D. Acker Award from Defense Acquisition University President Frank J. Anderson Jr.

◄Derrell James, Director for Business Development, Collins Aviation Systems, speaks as an industrial panelist on Performance Based Logistics.



DAU President Frank J. Anderson Jr., thanks the members of the Service Acquisition Executive (SAE) Panel. From left: Anderson; Marvin R. Sambur, Air





Louis A. "Lou" Kratz, Assistant Deputy Under Secretary of Defense (Logistics Plans and Programs), addresses the audience as a part of the Panel on Performance Based Logistics.





DAUAA Vice President Maureen Fino acts as Symposium Chairwoman for the third year in a row.

From left: DAU Commandant Army Col. Ronald Flom; Army Gen. Paul Kern, Commanding General, Army Materiel Command; DAU President Frank J. Anderson Jr., and DAUAA Symposium Chairwoman Maureen Fino at the end of the first day.

Photos by Army Sgt. Kevin Moses

# SITION SYMPOSIUM
## *onary Acquisition*
## *theon CEO, Daniel Burnham*



Force SAE; John Young, Navy SAE; Claude M Bolton Jr., Army SAE; and DAU Commandant Army Col. Ronald C. Flom, who served as panel moderator.
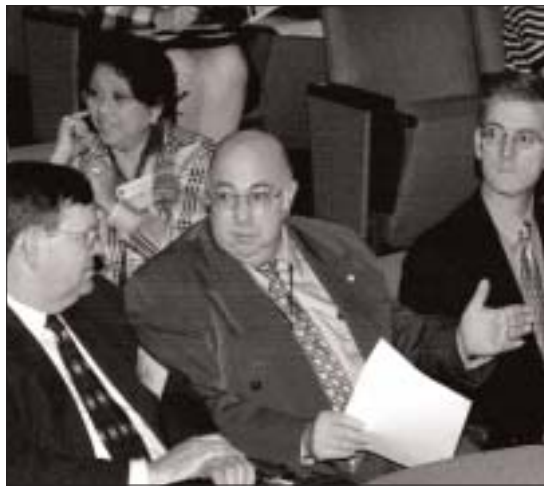


Participants at the symposium enjoyed many opportunities to network and interact.



DAU Director of Strategic Partnerships/DAUAA Vice President of Oerations Wayne Glass, addresses the Symposium.



Acknowledging DAUAA corporate sponsors. From left: Symposium Chairwoman Maureen Fino; Dr. Glenn Lamartin, Director, Defense Systems, OUSD(AT&L); Kurt Hull, Director of Government Learning Partnerships, Raytheon; Nick Cozempa, Vice President, Project Management Process, Lockheed Martin; Robert Bolt, Vice President, Public Policy and Analysis, Boeing; Barry Offrey, Vice President, Contract Pricing and Task Management, Northrop Grumman; and DAU President Frank J. Anderson Jr.

program management. Trust is critical, he stated. Government and industry relations must be able to share bad information as well as good. Additionally, complete and effective communication is necessary: both sides must be sure the information is being processed the same way. "It's like driving a car while your spouse is talking," he said. "Your spouse says, 'Look out. Look out. Look out! LOOK OUT!' It isn't until the fourth time real communication is occurring."

### Army Materiel Command and EA
Army Gen. Paul Kern, Commanding General, Army Materiel Command (AMC), delivered the final presentation. With a mission to "provide superior technology, acquisition support, and logistics to ensure dominant land force capability for soldiers, the United States, and our allies," AMC, he reported, has successfully leveraged transformation to meet an increased operational pace with improved performance, all at a lower cost.

### Seconds vs. Weeks
Advanced technology, Kern said, can reach the warfighter faster, and deployed systems are hallmarked by interoperability. Digitization has accelerated the process precipitously; "We do in seconds what used to take days or weeks," Kern stated.

The incorporation of EA into the process allows a much shorter acquisition response time for meeting the needs of the warfighter. Time-based requirements, as opposed to traditional fixed requirements, allow capability to reach the end user in increments and help capture user feedback as progress is made to the final increment. Kern defined spiral development as a "process" within the strategy of EA that may or may not be employed, depending on the specific program.

### Recognition
The symposium provided an opportunity for members of industry and government with a common interest in the continued improvement of the workforce to interact and exchange ideas. DAUAA recognized the success of the

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> —*Gen. Paul Kern, USA*
> *Commanding General*
> *Army Materiel Command*

Corporate Sponsor program, an effort initiated to provide the broadest possible outreach in strengthening the partnership between the DoD AT&L workforce and defense industry. By becoming a sponsor, companies can participate in advancing reciprocal learning opportunities and help develop the government and industry acquisition workforce to meet the accelerating needs of EA.

### Corporate Sponsors
As a token of appreciation to its corporate sponsors, Bill Bahnmaier, DAUAA vice president, Membership, presented certificates of appreciation to Raytheon, Boeing, Northrop-Grumman, and Lockheed-Martin. The relationship between these corporate sponsors—all of whom are also corporate university strategic partners of the Defense Acquisition University—and DAUAA represents an opportunity to improve education and training for the workforce of both government and industry.

### The David D. Acker Award
The David D. Acker "Skill in Communication" Award is DAUAA's most prestigious award. Created to honor former DSMC professor, David D. Acker, the award is presented annually to one individual who has promoted and communicated acquisition management excellence to the acquisition workforce.

The title of the award is a tribute to Acker, who played an active role in the preparation of the charter for the college and provided assistance and guidance to the commandant, as needed, from 1971 to 1973. He was a professor of management at the college for many years, during which time he performed with distinction in every department. He was one of the founders of the DSMC Alumni Association in 1983 and actively served in various positions on the Board of Directors until his death in 1992.

Past winners include current acting USD(AT&L) Michael Wynne, former Deputy Under Secretary of Defense (Acquisition Reform) Colleen Preston, and Assistant Secretary of the Army (AL&T) Claude M. Bolton.

This year's award was presented on June 17 to Dan Burnham, the chief executive officer and chairman of Raytheon. (Burnham has since stepped down from his role as CEO, and remains the Chairman of Raytheon and active in company councils and committees.) The award selection committee focused on Burnham's success with Raytheon and his commitment to improving relationships between government and industry;

Raytheon was the first corporation to sign a strategic partnership with DAU.

DAU President Frank Anderson Jr. presented the award, describing Burnham as a "great teammate of the university and of DoD." He spoke of Burnham as an individual who had led a significant transformation in his own company, shifting the focus of Raytheon to meet the 21st century concerns of the United States and its allies. "The word you think about connected to Mr. Burnham is 'passion,'" said Anderson, "and I emphasize 'passion'—I got pumped up just sitting at the table tonight and listening to him."

In his acceptance speech, Burnham admitted to displaying animated enthusiasm when dealing with topics he cares about. "Mr. Anderson says I'm passionate? The last time I talked here, I got so carried away my glasses flew straight off my face," he admitted. Burnham spoke of his appreciation and admiration of the defense procurement community. "Not everyone knows what you do," he said, "but I do." He recalled times during the 1990s when, despite those who questioned the need for defense after the Cold War ended, the acquisition corps remained focused on American security.

His appreciation of the job done by the DoD AT&L community helped create what he described as a "palpable bond" between industry and government. "The days of arm's length [between government and industry] are long gone," he said. "Learning together is now key. We can learn from each other's cultures." He urged program managers to give objective assessments frequently and to demand that industry give them feedback as well. "Government oversight really helps," he stated. "Industry gets better when we have to explain stuff."

**2004 Symposium**
Plans are already under way for the 2004 Defense Acquisition University Alumni Association Acquisition Symposium, according to DAUAA Vice President for Membership Bill Bahnmaier. "Mark your calendars now for the 21st Symposium," Bahnmaier said, "which will again be held at the Defense Acquisition University, Fort Belvoir, June 15-16, 2004."

**Editor's Note:** For more information on DAUAA, read "DAUAA Celebrates Anniversary, March-April 2003 *Program Manager,* p. 74, or visit the DAUAA Web site at http://www.dauaa.org.

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> —Daniel P. Burnham
> Chairman, Raytheon
> DAUAA 2003 Acker Award Winner

The Army announced on Aug. 22, 2003, that the University of California at Santa Barbara (UCSB) was awarded a contract for up to $50 million over five years to serve as the newest Army-sponsored University Affiliated Research Center (UARC). UCSB will partner with the California Institute of Technology (Cal Tech) and the Massachusetts Institute of Technology (MIT) to establish the Institute for Collaborative Biotechnologies (ICB).

The ICB will provide the Army with core competencies and expertise in the area of biologically derived and biologically inspired materials, sensors, and information processing expected to impact applications in precision strike, signature management, chem/bio and particulate environmental protection, and counter-terrorism capabilities.

"The ICB brings together world-class research institutions with the Army and future industry partnerships to leverage the rapid progress and large investments in Biotechnology," said Acting Deputy Assistant Secretary Research and Technology, Dr. Thomas H. Killion. "Full spectrum mission effectiveness and force survivability are essential elements of Army Transformational goals. Biotechnology holds great promise for creating paradigm shifting capabilities to achieve these goals."

A single university will serve as lead UARC host for the ICB, with subcontracts to two other universities that complement the expertise of the host institution and are fully integrated and networked into the host institution program.

# The Underlying Keys to Acquisition

## Needs, Requirements, Prioritization, Asset Allocation

### ALEXANDER R. SLATE

This article is actually intended for three different audiences. The first is the everyday working-level program managers, especially those relatively new to the field who have not yet managed to get a feel for how things are working behind the scenes. For this group, know that an understanding of the entire process of how your programs evolve will enable you to become more effective program managers. Immersing yourselves into the processes described in this article so that you can influence the fate of your programs is even better. But as you do so, understand when it is important to defend your program and when other programs should and do take priority. Each of our individual programs should not be an end unto itself.

The second audience is the requirements community. While many of you may know this information, some of you may be new to the area, without any grounding in program management. Hopefully, this article will help you understand what you are doing in the context of acquisition program management and give you an opportunity to try out a few new ideas.

The third audience is the staff groups within both the Department of Defense and Congress. For you, this article is

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simply meant to put the acquisition process into context and perhaps provide some philosophical direction as you help to formulate policies.

### Is Acquisition Transformation Doomed to Fail?

Right now, the acquisition community, particularly the U.S. Air Force (USAF) community, is in the throes of transformation. Typically, DoD's acquisition of major weapons systems is characterized as too lengthy, too costly, and inefficiently managed. Regrettably, some truth lies in the charges leveled against the system. For purposes of this article, I will not justify that statement —others (_many_ others) have and continue to do so— that simply isn't my intent. To mangle Shakespeare: "I come not to praise or bury Caesar, but lend me your ears."

Frankly, we within the acquisition community itself are not going to solve all the problems and transform DoD acquisition from a supertanker that takes miles to execute a turn, into a speedboat able to turn on a dime. But people are trying.

Within the USAF, two strategies aimed at doing a better job of managing the acquisition process are noteworthy:

- Switching to evolutionary acquisition.
- Reviewing the regulatory controls.

Both of these strategies are important and could potentially improve the process and speed up acquisitions. But without reformation of the title processes (generating needs and requirements, determining program priorities, and allocating assets), the results of evolutionary acquisition and any regulatory rewrites may be disappointing at best, and considered a failure at worst.

### First Among Equals

An old cliché has it that "bean counters rule the world." Cliché it may be, but like many old sayings, it conveys more than a hint of truth. We can try to improve processes, but ultimately the success or failure of any program will hinge on having a clear ultimate goal, an understandable plan to achieve that goal, and the money to translate the plan into action.

### Needs and Requirements

Needs and requirements are two halves of the same whole. In reality, our warfighters have only needs. Requirements are simply statements of how we propose to satisfy those needs. They must be stated clearly and be appropriate to the need. Acquisitions, and thereby acquisition plans, exist to satisfy requirements. If requirements aren't clear, no plan is ever going to satisfy them.

of evolutionary acquisition but would work just as well in a single large straight-line acquisition.

Instead of requirements documents, I would like to see the warfighters tell us the operational deficiencies of their current weapons system, what they would like to accomplish, and how they see operations evolving after delivery of the new weapons system that overcomes the identified operational deficiencies. Let me give you an example of the way that I would like to see requirements specified.

Currently, nuclear, biological, and chemical protective masks have several requirements related to protection. They must protect against certain agents at a certain agent density for 24 hours. The masks can only leak at a certain rate (this is known as fit factor) for chemical agents and at a different rate for biological agents. They also have to protect against nuclear radiation (generally accepted to mean radioactive fallout).

*Frankly, we within the acquisition community itself are not going to solve all the problems and transform DoD acquisition from a supertanker that takes miles to execute a turn, into a speedboat able to turn on a dime. But people are trying.*

In other words, having the clear goal is the *needs and requirements*; the plan is the *acquisition* itself; and determining how money is spent involves both *prioritization and asset allocation.*

All of these processes are important, but the most important, in my mind, is asset allocation. Why? Clearly, without money no program exists. Furthermore, even a clear set of goals and a good plan to reach them are of no use if the money needed to accomplish the plan isn't available.

But requirements also need to be appropriate and to some degree flexible. If not, plans will be too elaborate, too labyrinthine, and too expensive. In my article "Evolutionary Acquisition: Breaking the Mold—New Possibilities from a Changed Perspective," published in *Program Manager* magazine, May-June 2002, I suggested a process whereby the warfighting community (the users) would develop a statement of need and a concept of operations. Then the users, together with the development (or acquisition) and testing communities, would develop the requirements and acquisition strategy. That concept was treated in the context

Several "problems" exist with stating the requirements in this manner. First, the requirements community took a single concept—*protection*—and broke it into specific areas. What they did was to deliver a design solution as opposed to a need. Second, this process encouraged numbers that may not be meaningful for the sake of numbers .

For example, the entire military population could not possibly obtain the same fit factor, so satisfying the requirements

## OPTIMIZED LISTS (NON-COST FACTORS)

It must be remembered that dollars are not the only asset that a program needs in order to function. Manpower, test facilities, manufacturing, and warehouse facilities are just some of the non-dollar assets needed to accomplish the programs we are going to fund. The people responsible for the higher levels of decision making don't have enough information about these assets to do more than understand that the assets also play a role in the accomplishment of the mission. But as the money flows down the execution chain closer to the actual working level, these factors become more important.

To complicate matters, to a degree these non-cost factors *are* cost factors. Remember that manpower and facility upkeep falls under the heading of Operations and Maintenance (O&M). What if we have put too much money into Development and Production without a sufficient amount of money in O&M to fund the manpower to oversee the programs?

This is not just an academic question: It is one that is a pressing everyday concern to program offices. For almost 20 years, we have been downsizing the personnel lists of the DoD without decreasing the numbers of programs we have been asking the remaining personnel to accomplish. We have downsized past the point of cutting out the fat. The result is one of two things, and often two of two things: first, inefficiencies, and second the use of different types of money to make up the difference. For instance, if there is insufficient program office staff in the military or civilian service, outside contractors will need to be hired to make up the discrepancy—an additional cost. These contractors don't get paid with O&M funding; they get paid with Research and Development or Production funding.

operations will need to remain somewhat flexible and allow for capabilities upgrade as the system develops and matures. At this point the requirements document may be generated, although a case might be made for going directly to an initial systems specification.

### Prioritization and the Occasional Failure of Reason

To a large measure, prioritization and asset allocation go hand in glove, although no absolute correlation between the two exists. What this means is that funding may not necessarily flow in line with prioritization, though there should be a very strong relationship. (This is a concept more fully explained in subsequent paragraphs).

To begin, we must ask ourselves how we are going to handle prioritization. Now this question itself may have many meanings, but we must first decide whether we want to lump all the efforts in a great big pile and prioritize them en masse, or divide them into discrete groups of programs and prioritize each group separately. For several reasons, I think the answer is the latter. First, and certainly one of the most important reasons, is that it really would be too difficult to deal with everything at once. Second, we have money that has different budgeted uses (generally we call this the "color" of money). Because of that, the different colors of money actually have different users, so the programs for each type of money should be prioritized separately.

Prioritization is the area discussed in this article where the lack of a scientific process causes the least amount of trouble. As in combat—where the right thing to do is intuitive in nature, the result of many different fluid and shifting factors—some measure of a gut feel for what the priorities should be, may be exactly what is needed. Attempting to analyze the situation by its separate parts simply takes too long or actually leads us to the wrong answers.

This is disturbing to many of us who take an engineering view of the world. Let's look at a couple of different ways

exactly as written was impractical, if not impossible.

To my mind, the following statement of requirements is a far better description. (Numbers used here are examples only and do not reflect real needs.)

"The mask system must protect the military population under the following conditions. The expected period of threat is four days. Vesicant and nerve (G and V) agents will be present in liquid (at 5 grams per square meter), vapor (density of 20 milligrams per cubic meter of air), and aerosol (20 milligrams per cubic meter of air of agent with mass median particle diameters of 5 micrograms) forms. No greater than 10 percent of the population may exhibit any symptoms related to chemical or biological agents or radiation fallout poisoning, and no more than 3 percent may exhibit inca-

pacitating symptoms. Personnel are expected to work an average of 12 hours a day in the contaminated environment. During the four-day protection period, the warfighters will be exposed to liquid agents a maximum of twice and to vapor or aerosols to 20,000 milligram-minutes per meter cubed."

Expressing the requirements this way lays out everything the developers need to know. It gives the developers and contractors the ability to balance the different aspects of protection in a way that makes the best design sense.

But the warfighters aren't just laying out needs. They also are writing an initial perceived concept of operations. The initial concept of operations should consist of actual attainable systems, as well as pie in the sky and "if I really had my way" in equal measure. The concept of

of determining priorities, their strengths and weaknesses.

First is the scientific/engineering analysis method. Most processes can be broken down into little pieces, each of which can be measured and quantified, then put back together to make a coherent whole. As a result, we have a number of tools that we use as decision aids. In the engineering and mathematical world, these come under the grandiose heading of "multi-criterion optimization decision support systems."

The way these tools work (in one way or another) is by taking what we wish to analyze (in this case a group of programs that we wish to prioritize) and determining what the factors are that make up the whole picture we wish to examine. These factors may be such things as user utility, technological maturity, cost, and level of automation. Each of these factors is a certain percentage of the whole puzzle, so each is assigned a weight.

A grading scale is developed for each factor (generally on a zero to one scale). An example might be that for technological maturity, the availability of a commercial solution would be a 1; a non-developmental solution, 0.9; a developmental effort requiring less than two years, 0.7; an effort requiring two to five years, 0.5; five to seven years, 0.3; and any greater time-scale, 0.1. Each program is graded for each factor. We can then multiply the grades by the weights and add up the scores for each program. The highest score is the No. 1 priority, and so on down the line.

Sounds great, right? It's easy, and with seemingly little room for error. Three elements of subjectivity, however, are still apparent that can lead us to the wrong conclusions.
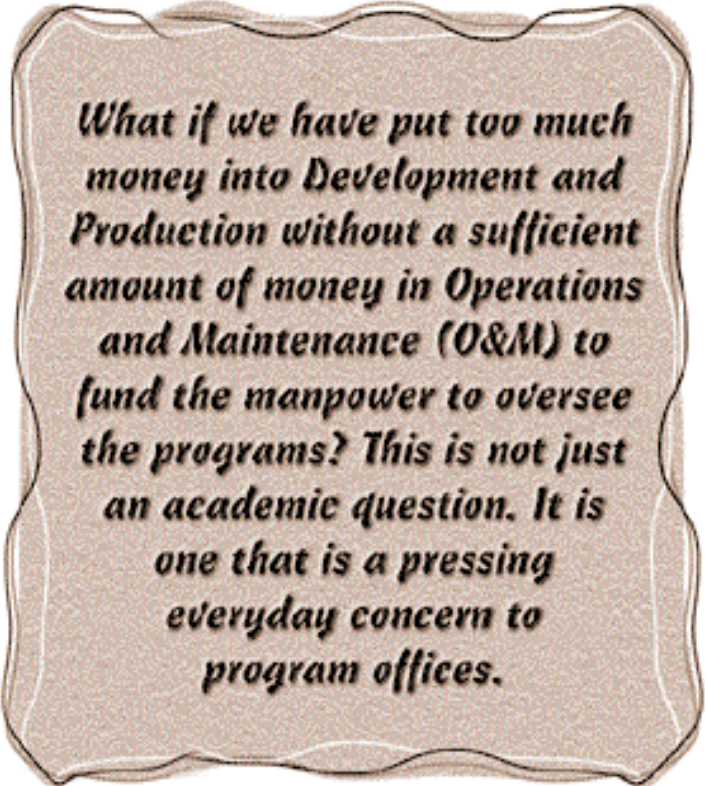
- First is being able to assign the correct weights and grading curves for the factors.

- Second is the assessment of each program's grades for the factors, whether

*What if we have put too much money into Development and Production without a sufficient amount of money in Operations and Maintenance (O&M) to fund the manpower to oversee the programs? This is not just an academic question. It is one that is a pressing everyday concern to program offices.*

it is based on reality or merely wishing it were so.

- Third is the simple fact that this scheme attempts to force a single, simplistic "view" of a potentially complex situation.

As we look across the programs, the weights of the factors won't always be constants. One system may have a very high user utility but only if a second system exists; without it, the first system actually has a low utility. The second system by itself has only a mediocre user utility. As we rack and stack the programs (assuming user utility has an effect on our final decisions), the first system ends up with a high priority and the second has a low priority. So in this scenario where the funding lines are drawn later, the first system is funded and the second system is not. The result is that we develop a system on its own that has little utility by itself.

But this isn't the only way we can determine priorities. We can bring the users together and have each one simply rank each program. The programs that are ranked the highest priority by

most users would receive the highest priority. But what if all the users except one represent very small user populations, and the single user alone represents 70 percent of the users? That single user representative may have a very different set of priorities from the those of the others. But being a single voice, that single user's priorities would keep getting bumped down the list.

Well, I've painted a pretty grim picture of prioritization. There seems to be no way to do this properly. But the trick is to adapt. Use some of that gut feel in the process. Use whichever method seems to make the most sense, but understand that each of these systems is going to come up with something that isn't totally correct. Get your priority lists from these methods, and then adjust the list so it does make sense.

### Asset Allocation—in Particular Doling out Dollars

In one sense, asset allocation is the ultimate prioritization, but in the final analysis, it isn't. Why? Because where we put the money is our highest priority—and that isn't always necessarily

just asset allocation. But we have to start asset allocation with those prioritization lists. And digressing a little bit, let me say that although a lot is wrong with our budgeting system and its colors of money, the colors of money at least prevent us from a monolithic system of spending. What do I mean by that?

As we examine our *needs* (and I use the word here just a little differently from its previous usage in this article), we have some basic functions. We must pay for the upkeep and operations of the military machine we already have functioning (Operations and Maintenance [O&M] dollars). We must maintain force levels or bring force levels up to determined levels of strength (production and some O&M dollars). We must look to the future and develop improved systems (Research and Development [R&D]). And we must put some attention into the near term, mid term, and long term.

We must be able to assess (also known as *test*) the capabilities that we have or the ones we are building (R&D, production, and O&M dollars, depending on what we are testing). We need to support the people who actually make the system run (O&M and Military Construction [MILCON] dollars). Finally (and sometimes forgotten), as we plan for expanded capability, we need the ability to assess the capabilities we desire for the future (R&D and MILCON dollars).

If it weren't for the different colors of money, the greatest tendency would be to sacrifice the future for the sake of the present—or sometimes (though this is less likely), sacrifice too much now for the sake of the future. The current system of assigning colors of money prevents us from doing either of those too easily. There may be reasons to do one or the other, but we really have to desire the outcome a great deal to put up with the paperwork necessary to make it happen.

So the first trick of allocating the money is to determine in which general cate-gory the money belongs: R&D, production, O&M, or MILCON. But our issues don't end there.

If we put money into R&D, we must determine how much we allocate toward the particular areas. How much do we devote to near-term development such as systems integration, systems demonstration, and in some cases low rate initial production? And of that amount, how much do we use to extend the capabilities of existing equipment and how much toward developing whole new systems?

Next we must decide how much to spend on long-term development such as concept development or advanced concept demonstration. And finally, we must decide how much to expend on the technical base (research and test development), and how much of that to advocate for more practical research and how much for pure research. Still missing, however, is *test*. Test is actually wrapped up in these areas as we fund particular programs (so much of each program's budget is devoted to test).

Production also has categories, but these are easier in that we fund each of them depending upon the priority lists and the programs that are actually funded. MILCON is almost as easy, the only decision being a basic determination (made during prioritization) of how much to devote to morale and member support and how much to devote to business construction.

O&M is almost as troublesome, if not more so, than R&D. Certainly the scope of O&M is broader. Included in O&M are salaries, everyday operating expenses (and even this covers a very wide range of actions and items), equipment maintenance, and even the procurement of already developed and fully fielded equipment to cover shortages. In fact, based upon what I know just from my own experience working in acquisition, I'd say that O&M is the most consistently underfunded area in all of the DoD. I can even remember times when it was questionable if we would be able to cover everyone's salaries.

Now that we have a basic understanding of the big picture, we have to ask a very basic question regarding the rules by which we shall allocate money: Are we going to fund strictly in order of priority, or shall we attempt to "optimize" the list? And if the latter, do we mean getting the "best" combination of programs or funding as many programs as possible? It is critical to understand that going strictly by the priority listing doesn't necessarily provide the best bang for the buck. This is due, at least in part, to the fact that the needs, requirements, and prioritization process are somewhat disjointed (or as my boss prefers, "are not optimally connected"). But also, please understand that none of these three "systems" is necessarily bad or wrong.

## Strict Priority

This is a very straightforward approach, at least to start. We have a prioritized list of programs, and actually we may have several different lists. We have a pot of money. We start with the program listed as the No. 1 priority and fund it. We proceed down the line for as long as we have money to fund programs. Let us say that we have 10 programs, and sufficient funding only for the first six. The question now becomes, what we should do with the money remaining after we have funded those first six programs.

Do we partially fund the priority No. 7 program? Can the program be split, stretched out, or descoped so it can be partially funded? If we do any of the latter, does the program retain the same priority rating? Do we skip No. 7 (and potentially other programs) if there is sufficient money left over to fund one or more of programs 8 through 10?

## Optimized Lists (Greatest Number)

Let's take our example of a list of 10 programs, of which we can fund the first six and part of No. 7. What do we do if, for example, we didn't fund the No. 3 priority program (which is very expensive), and the money saved by not funding the No. 3 program could pay for all of the remaining programs? That

is, we funded No. 1, No. 2, and priorities No. 4 through No. 10. Is this situation changed if the program we needed to *not* fund was the No.1 program instead of the No. 3 program?

### Optimized Lists (Biggest Bang for the Buck)
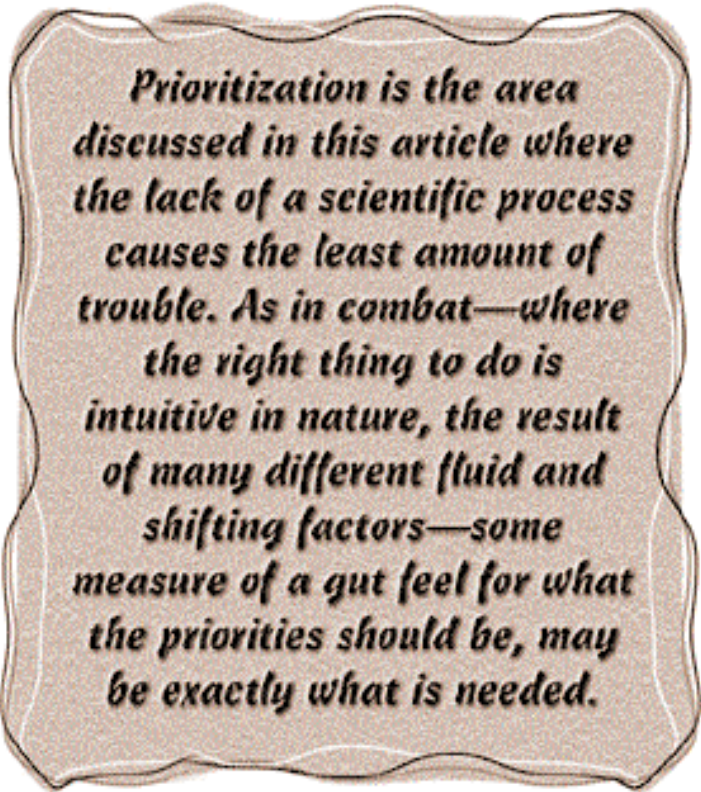
This is only possible if we have some sort of quantitative measurement of the relative importance of each of the programs to each other (such as we discussed in the section on prioritization). Here we could try funding various combinations of programs until we fund the combination with the highest aggregate weighting.

In the section on prioritization, we also discussed the case of two linked programs, where the higher priority program relies upon one of the lower ranked programs. Do we take that into account as we determine asset allocation?

### Decisions and Consequences

One more very important factor must be considered as we look at both asset allocation and prioritization. The decisions we make in any particular year have impacts, some of them for decades after those initial decisions. Programs don't just appear and then disappear. They take time to accomplish. And then if successful, they incur costs for a long time following. A successful development program should result in production funding. Once we produce something, we have to maintain it. And even when the useful life is over, we have to dispose of the items we have produced. This is not a trivial set of issues.

Of course, priorities are continually shifting. Last year's No. 1 program is only No.5 this year, and who knows what priority it will be next year. But once committed (and I am not using the word in its governmental fiscal meaning), we cannot change course that quickly. Oh, they try! And that continual shifting of priorities, along with the associated funding of these programs, is the root of many of the inefficiencies in the acquisition system that people just love to complain about.

> *Prioritization is the area discussed in this article where the lack of a scientific process causes the least amount of trouble. As in combat—where the right thing to do is intuitive in nature, the result of many different fluid and shifting factors—some measure of a gut feel for what the priorities should be, may be exactly what is needed.*

I believe that in order for acquisition transformation to work, we need to take a much closer look at stabilizing the processes discussed in this article. This is all the more true as we move to using evolutionary acquisition strategies—the latest paradigm on the block.

### An Optimistic Look at the Future

A lot needs to happen for acquisition to be reasonably efficient. But the acquisition community can do a lot to help itself by developing efficient processes. By themselves, these processes will not be enough. Stable requirements, stable program authorizations, and stable appropriations are necessary for any real, meaningful transformation of the system.

My goal is to implement visible processes where operational needs are identified and the whole community—users, developers, and testers—develops concurrently requirements documents and acquisition strategies that work together.

I want to see programs prioritized in a manner that addresses the needs of the warfighters in a holistic fashion—realizing that certain programs feed off and require certain other programs, and all of these programs require an infrastructure that encourages and supports acquisition of the right weapons systems.

I want a process where programs receive funding with an eye to the long term, where the synergies involved and the consequence of the levels of funding and the schedules involved are taken into account, understood, and not taken lightly.

Once we understand this and start working together as a team—from the Congress and their staffs to the personnel in the Pentagon, from the Program Offices and the test teams (both developmental and operational) to the soldiers, sailors, airmen, and Marines deployed around the world—only then will we have fully earned our reputation as developing and acquiring the world's best weapons systems for our nation's warfighters.

**Editor's Note:** The author welcomes questions or comments on this article. Contact him at alex.slate@brooks.af.mil.

# Six Sigma Approach Adds Discipline to Excalibur Program Work Practices

## Improving Process Control for Development Test Hardware

CHARLES J. GIUFURTA • KIM DUNHAM

The Army's Excalibur Program Office teamed with the system developer Raytheon Missile Systems to develop an improved process that has significantly increased control over the build of development hardware. The Army's Excalibur Program is a family of cannon delivered, precision engagement, extended range artillery projectiles that use the Global Positioning System (GPS) to self-guide to a programmed location. The first of the family to be developed is a versatile unitary munition with a high explosive fragmenting warhead. It consists of an aerodynamically streamlined, fin stabilized projectile in three sections: guidance navigation and control (GN&C), payload, and base (Figure 1).

While there will be only one tactical configuration of the unitary munition, Excalibur's extensive development testing program requires eight basic projectile test configurations. However, counting variations within each configuration, the development build program comprises a total of 39 different hardware test configurations. As initial hardware builds began, both the government and contractor program offices viewed as a critical challenge the configuration management and build process control of this wide variety of test hardware.

### Six Sigma Build Process Team

Since the government and contractor offices had used the Six Sigma approach on a number of other applications with good results, a Six Sigma team of contractor and government PM personnel was formed for Excalibur's hardware build process. Six Sigma is a quality technique incorporating a rigorous methodology to define, measure, analyze, improve, and control selected processes in order to reduce errors and scrap. Key to the approach is the formation of a multi-functional team directed by team leaders trained in the Six Sigma methodology.

The Excalibur Six Sigma team identified the initial tasks as reviewing and documenting the current development build process and identifying any issues that impede that process. The team first did an extensive series of interviews with program personnel running the gamut from senior management to the hands-on production workers. There were two primary purposes for these interviews: first, to gather information to document the ongoing production build process; and second, to obtain comments, issues, problems, and recommendations to improve the existing process.

The sessions were highly productive, providing the team with not only the information necessary to process map the existing build process, but also a
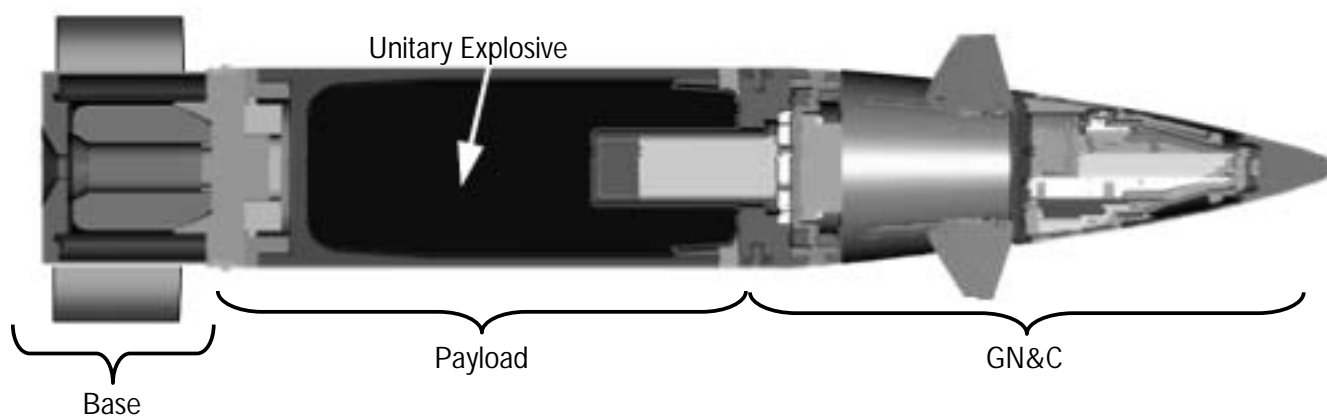


FIGURE 1. **First Extended Range, Self-Guided Artillery Projectile Developed under Army's Excalibur Program**

*Giufurta is the representative of the U.S. Army Office of the Product Manager for Excalibur to Raytheon Missile Systems, Tucson, Ariz. He holds an M.S. from Florida Institute of Technology and is a graduate of the DSMC Advanced Program Management course. Dunham is a Raytheon Six Sigma expert at Raytheon Missile Systems, Tucson, Ariz.*

wealth of feedback on the system. The team identified over 100 issues or problems associated with previous builds of test hardware and, using Pareto analysis, prioritized them for use in corrective action sessions.

## Mapping (Defining) the Current Process

The process mapping stage of Six Sigma consists of putting together a flow diagram showing how the various steps of the process sequence and interrelate. Figure 2 shows a portion of the Excalibur development build process. Note that the development build process consists not only of fabricating the hardware, but also of a series of steps prior to and subsequent to the build. Many of these steps are multi-disciplinary meetings acting as "gates" before the process proceeds. They extend from initiating the build process by generating the planning through the actual shipment of the test hardware.

The process map for the Excalibur development build allowed the team to clarify what the current process was and examine it from the viewpoint of improvement. This step became an iterative effort to ensure that all involved personnel had a chance to give their input and to comment as this phase of the project progressed.

## Measuring and Analyzing

Analysis of the existing process revealed redundant steps that could be combined, out-of-phase elements, poorly

> **Although the major benefits are yet to be realized ... the improvements to date—shorter process times, less confusion over the build cycle and better documentation—are justifying the investment in the Six Sigma process.**

defined steps, and other process shortcomings. In addition, problems and failures with previous hardware builds were identified and analyzed to see if they would be corrected with process changes. The team also collected data to measure the current baseline against proposed improvements (for example average process times for each step, com-

pleteness of documentation, and performance of the hardware).

In concurrent brainstorming sessions, the previously prioritized issue areas were analyzed, and cause and effect diagrams were prepared. During this phase, a fault tree analysis and a complete set of Failure Mode and Effects Analyses (FMEA) were prepared. They were followed by a series of information exchange sessions to keep everyone updated on progress, to present the completed map of the current process, and to obtain additional comments and inputs.

## The Improved Process

A multitude of suggestions for improvement came out of the detailed mapping of the current process. Before these improvements were incorporated, they were often experimented with offline to assess their merit. This process led to further changes to make the recommended process even more robust. Checklist sheets were also prepared to assist team leaders in following each step of the improved process to ensure its consistency. But perhaps the biggest change to the build process was to formalize it by putting it under configuration control so that in addition to the configuration management control of the hardware itself, the process too was now controlled.

The point was emphasized by the inclusion on the process flow map of a signature block for the approval authority. This measure was taken to indicate that there could be no deviation from the baseline process without formal approval. Another major change was to develop a system ensuring consistency and discipline within the individual blocks. Many of the blocks were meetings, and the team felt it was critical to document each of them. This was accomplished by clearly identifying the group with lead authority, the organizations needing to have representation, the entrance criteria, and the meeting inputs and outputs. This information was formalized into block descriptors for each of the process steps (Figure 3).



FIGURE 2. **Representative Portion of the Excalibur Development Build Process**

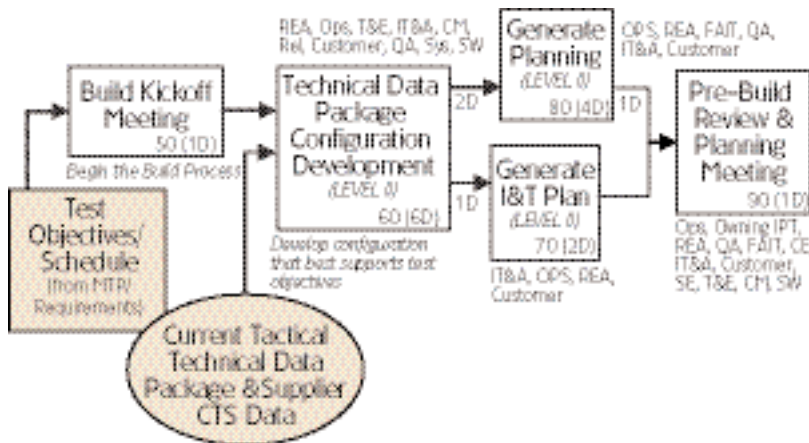## Build Kickoff Meeting (50)

**Description:** Develop a build schedule and assign action items to begin the build process.

**Authority:** IPT Lead

**Members:** IT&A, OPS, T&E, Software, Customer, Systems, CM, REAs, QA, FAIT, and Reliability

**Entrance Criteria:**

Test Objectives (Sys, T&E, IPT), Quantity (IPT Lead)

| Inputs: | Outputs: |
|---|---|
| •Estimated Schedule Dates (IPT Lead) | •Proposed Build Schedule (IPT Lead) |
| •Approved Test Objectives (Sys, T&E) | •Key Component Configuration (IPT Lead) |
| •Hardware Status Review, Key Components (IPT Lead) | •Assign Action Items (IPT Lead) |
| | •Identify Key Personnel (All) |
| •Supplier CTS Delivery Dates (REA) | •Risk Identified (All) |
| •TPR, FRB Lessons Learned (QA, Rel) | •Supplier/Subsystems Build Req (IPT Lead) |

rately and compared to historical times. Using the Six Sigma process for the build process has also added discipline to the overall work practices of all Excalibur personnel.

Although the major benefits are yet to be realized since the program is just entering a more intensive build phase, the improvements to date—shorter process times, less confusion over the build cycle and better documentation—are justifying the investment in the Six Sigma process. As the builds continue, the established metrics will allow the program to monitor closely the improvements and—most important—the impact on the quality of the test hardware.

**Editor's Note:** The authors welcome questions or comments on this article. Contact them at charles.giufurta@us.army.mil and kldunham@raytheon.com.

The team then presented the improved process to all the involved personnel in a series of briefings intended to familiarize them with the new process and to solicit any further comments or suggestions.

### Implementation and Control

The next phase was to run the process through several hardware builds to iron out the bugs and make any further changes, after which the next version of the improved process was put under configuration management control. This step was highlighted by a formal signing of the overall process map.

The team, recognizing the likelihood that the benefits of the improvements would be short-lived if not monitored, established a set of metrics to monitor the system, measure benefits, and provide the basis for changes or corrective actions (Figure 4).

Even though it is still early in the hardware build cycle, a number of benefits have already been realized. All project personnel have a much better understanding of the build process, and many areas of confusion have been eliminated with the formalization of the process. Numerous steps were streamlined or combined, and feedback from the initial interview sessions prompted corrective actions to remove bottlenecks and other impediments to production. A further benefit was that the process times could be predicted more accu-

### METRICS FOR THE EXCALIBUR BUILD PROCESS

| Metric | Description | How Measured |
|---|---|---|
| Complete Cycle Time | The amount of time to complete the build process. | Compare to previous hardware builds; time in days from Block 60 to Block 320. |
| Individual Cycle Time | The amount of time to complete the build process. Looking to improve the times. | Compare to previous hardware builds; time in days from each Block to Block. |
| Adequate Review Times | Was the adequate amount of review time provided for at the various steps? | Review documentation as to when meetings notices were sent out, read-aheads, etc. |
| Adherence to Process | Is the build process being followed? | Audit conformance. Meeting attendance review documentation. |
| Documentation | Is required documentation of individual builds being accomplished, ie, meeting notices, minutes, attendees, checklists, etc? | Review documentation trail for missing elements, ie, no meeting minutes, notices, checklist, etc. |
| Performance | How successful were the builds? | Problem documentation: Build Problems, Test Failures, Non-Conformance Material Reports, Test Problem Reports, Failure Review Board Action Items. |
| User Satisfaction | How satisfied are the users that the system is an improvement and is working? | Questionnaire/Follow-up Interviews Meeting Critique. |

# Army Acquisition Support Center
## Prepares for the Future

## With New Online Look

### http://asc.rdaisa.army.mil

**Reinforcing Support to the Warfighter Through User-Friendly Access to Information Resources**

**FORT BELVOIR VA**

The Army Acquisition Support Center (ASC), the new Field Operating Agency under the Assistant Secretary of the Army for Acquisition, Logistics and Technology, has revamped its Web site to better serve its customers, and ultimately the soldier. ASC's customers, the entire Army Acquisition, Logistics and Technology workforce (AL&TWF), will notice the striking bronze and green design of the new site, <http://asc.rdaisa.army.mil>, which reflects the dynamic face of the AL&TWF and reinforces its support of the warfighter. The new Web site provides user-friendly navigation and encompasses the goals and structures that make up the organization.

"Army acquisition plays a critical role in protecting America and America's fighting forces," said ASC Director Col. Mary Fuller. "ASC is preparing for the future and helping to ensure that those who make the decisions that affect our fighting forces are well equipped with the most technologically advanced resources. We have upgraded our Web site to make it a more useful tool for our customers—both in the office and in the field."

ASC, formed by merging the Army Acquisition Career Management Office with the Army Acquisition Executive Support Agency as well as career programs CP-14 (Contracting) and CP-13/17 (LogPro), presents a new site that features in-depth information about the organization's infrastructure, programs, publications, career information, and events. ASC's workforce operates in a dynamic environment using leading-edge concepts and technologies to ensure that warfighters have the equipment and supplies they need to do their job.

*The Army Acquisition Support Center is designed to support the readiness of the Army's warfighter by developing a world-class professional acquisition workforce, effectively acquiring and stewarding resources, and providing customers with the best possible products and services.*

### http://asc.rdaisa.army.mil

# Tin Whiskers Threaten Reliability of Electronics Components

## DAU Strategic Partner BMPCOE Leads Mitigation Research

The Office of Naval Research's Best Manufacturing Practices Center of Excellence (BMPCOE) is a partnership among the BMP Program, the Department of Commerce, and the University of Maryland, College Park. DAU is a strategic partner and a BMPCOE Satellite Center. Since its creation in 1985, BMP has set out to help businesses identify, research, and promote exceptional manufacturing practices, methods, and procedures.

BMPCOE's objective is to empower defense and commercial customers to operate at a higher level of efficiency and effectiveness. To this end, BMPCOE has three core competencies represented by tools and resources that enable organizations to identify and apply best practices and to become part of a vast, mutually supportive information exchange network:

- **On-site Surveys**—conducted with the goal of identifying best practices, validating and documenting them, and then encouraging government, industry, and academia to share information and implement the practices where applicable.

- **Systems Engineering**—facilitated through BMPCOE's Program Manager's WorkStation (PMWS), a suite of electronic tools that provide risk management, engineering support, and failure analysis through integrated problem solving.

- **Web Technologies**—offered through the Collaborative Work Environment (CWE) to provide users with an integrated digital environment to access and process a common set of docu-



Tin whiskers on terminations of ceramic chip capacitor.
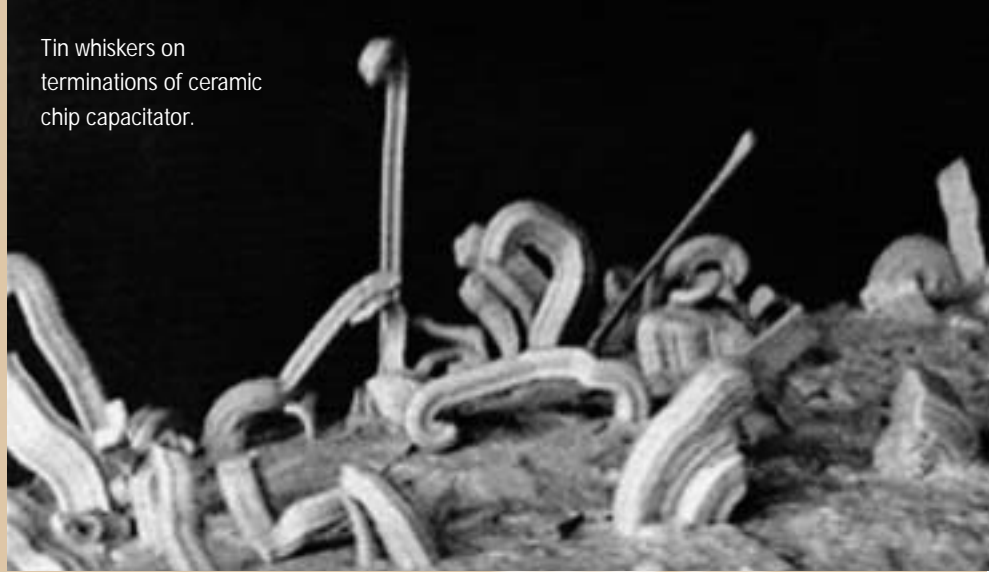
**Tin whiskers are single crystal, electrically conductive, hair-like structures that grow from lead-free pure tin surfaces.**

ments regardless of user location or platform.

### Tin Whiskers: A Growing Risk

BMPCOE has demonstrated excellence not only through the performance of its core competencies, but also by its ongoing efforts in solving emerging problems and researching manufacturing techniques. One of BMPCOE's primary contributions to the Fleet's operational effectiveness is its long-standing support to the STANDARD Missile (SM) programs. BMPCOE staff are now part of the vanguard of the Navy team actively pursuing the mitigation of a phenomenon known as "tin whiskers."

Tin whiskers are single crystal, electrically conductive, hair-like structures that

grow from pure tin surfaces. Whiskering can develop under typical operating conditions on any product type (not just electronics) that uses lead-free pure tin coatings, and it has been found to form in a wide range of applications, including space, missile, airborne, and medical. This emerging problem presents serious safety, reliability, and potential liability threats for a wide variety of electronic systems employing components plated with tin, including military and aerospace programs requiring high-reliability electronic components and assemblies.

The tin whisker failure mode, electrical shorting, has been responsible for the loss of billions of dollars' worth of satellites, missiles, and other equipment. At

"Pure tin" plated hook terminals of a MIL-R-6106 style relay with LDC 8913.

least three commercial satellites have failed as a result of blown fuses and relays attributed to tin whiskers. Although observed for decades, the causes of tin whiskering are still not fully understood.

## Current Mitigation Practices

For many years, tin-lead alloy coatings have been used in lieu of pure tin coatings as a standard procedure to suppress whisker growth. In recent years, environmental concerns and the associated market pressures have fueled a movement to transition to lead-free electronics. (The European conversion to lead-free components is scheduled to take effect in June 2006.) We are at a transitional point where numerous changes are affecting the standard materials and finishes offered by component manufacturers. Many major suppliers are already offering only lead-free finishes, usually pure tin. Even though some have expressed an intent to maintain a dual product line (tin-lead and lead-free), the expectation is that in time, they too will be forced by financial pressures into solely lead-free production.

An alternative to tin-lead in mitigating some types of tin whisker-related failures is conformal coating, a process whereby components are sprayed with a substance (such as silicone, parylene, urethane, acrylic, or epoxy) to retard the growth of whiskers or to contain them within the coating. However, conformal coating can be expensive and must maintain the exact thickness for prevention if it is not to cause additional problems. Although plating and soldering chemists and metallurgists are pursuing new technologies to limit tin whiskering, the success of these efforts is uncertain and may not be available for many years.

Designers, engineers, and program managers are faced with a complex and dynamic risk situation. There are currently no dependable tests to predict whisker formation and no proven methods to prevent its occurrence. And with the move to lead-free components, the use of pure tin plating as a standard finish on electronics components is on the increase and will continue to increase in the future.

## BMPCOE-Raytheon Project

BMPCOE experts were successful in identifying the tin whiskers risk to the SM programs and in raising the awareness of both Navy and contractor managers. BMPCOE, with the SM prime contractor Raytheon, is now co-managing a project to conduct research and to develop a two-part strategic action plan addressing the tin whiskers problem. A large government/industry/academia project team includes participants from the University of Maryland CALCE Electronic Products & Systems Center; NASA; Boeing; Honeywell; Northrop Grumman; the Naval Air Warfare Center, China Lake; and others.

The team of experts must first define stop-gap procedures that will be used across sites or programs in the short term. Second, the project team must investigate mitigation alternatives to be performed in the medium term. The results will be used to update the short-term solutions and will eventually become the properly substantiated industry best practices. This work should help all high-reliability users to mitigate the risk associated with tin-coated components. The availability of a standard process for dealing with tin would serve to enhance the reliability and cost-effectiveness of products that would otherwise have been developed and built without addressing tin whisker control. This will continue to improve Fleet reliability and customer satisfaction, and to provide cost avoidance for both contractors and customers.

## BMPCOE Seeks Additional Support

As BMPCOE experts work with the many participating organizations in multiple locations to devise policies for handling tin usage, efficient coordination and data sharing will eliminate duplication of effort and result in faster solutions. BMPCOE is presently looking for support from other Navy program offices and military services and for in-kind support from Department of Defense contractors to expand the current consortium for greater productivity.

While BMPCOE is involved in many projects, tin whiskers mitigation is a priority because of the high and immediate risk factor. BMPCOE continues to support SM programs in risk management and systems engineering; to work diligently in resolving the risks associated with tin coatings; and to strive for excellence through increasing the quality, reliability, and maintainability of U.S. defense and commercial manufacturers.

# Reading 101—Reading for Non-readers

## Time to Get Serious

CAPT. DANIEL WARD, USAF

The problem with articles like this is the people who need to read them usually don't. That is particularly true of this article, since the topic is the importance of reading and how to encourage it in the workplace. If you are reading this, you probably don't need to be convinced that reading is an important part of your professional development. It's the people who are not reading who need to hear the message. That's the problem.

Another problem, of course, is that even if we read, we are often hesitant or unable to translate what we've learned into action—but that is a topic for another day.

### Reading and Program Management

What does this have to do with Defense Acquisition Management? I'm glad you asked. The body of available material related to our discipline is significant, and much of it can be found at the DAU press Web site. (The sidebar on p. 48 provides links to a few Web sites with reading lists, reviews, and—in most cases, free—access to the complete texts.) Government personnel can obtain free printed copies of many DAU publications, and almost everything is available online.

These reports and publications provide a tremendous opportunity to discover lessons learned by others, to explore new ideas, and to further our own professional development. Of particular interest are the Military Research Fellows Reports, which cover topics from Transatlantic Armaments Cooperation to Simulation-Based Acquisition to an analysis of how cost-based strategies are undermining the DoD. Did I mention they are free?

### Why, What?

This article will focus on two questions:

- Why do some people not read?
- What can be done about it?

An admittedly unscientific inquiry into the "why'" question identified three main reasons people give for not reading:

#### I DON'T HAVE ENOUGH TIME

This is the most puzzling reason of the three. While Einstein did in fact prove that time is relative, everyone actually has the same number of hours in a day as long as our velocity does not get too close to the speed of light. How we choose to fill those hours varies significantly from person to person, but the amount of time in a day is essentially constant.

Therefore, the first explanation should probably be rephrased as follows: "I don't choose to spend time on reading, even though I have the same amount of time each day as everyone else." While that doesn't really answer the question, it might shed some light on the situation. A lack of time is not the problem—the issue is a lack of will. Blaming inadequate hours in the day ignores the dimension of personal responsibility.

Everyone who makes decisions about how to spend time can decide to do a little reading once in a while. Even the president of the United States (whose workdays are long, with a schedule largely dictated by others), manages to read books.

#### I DON'T KNOW WHERE TO START

We can't complain about a shortage of reading material in the world today, so

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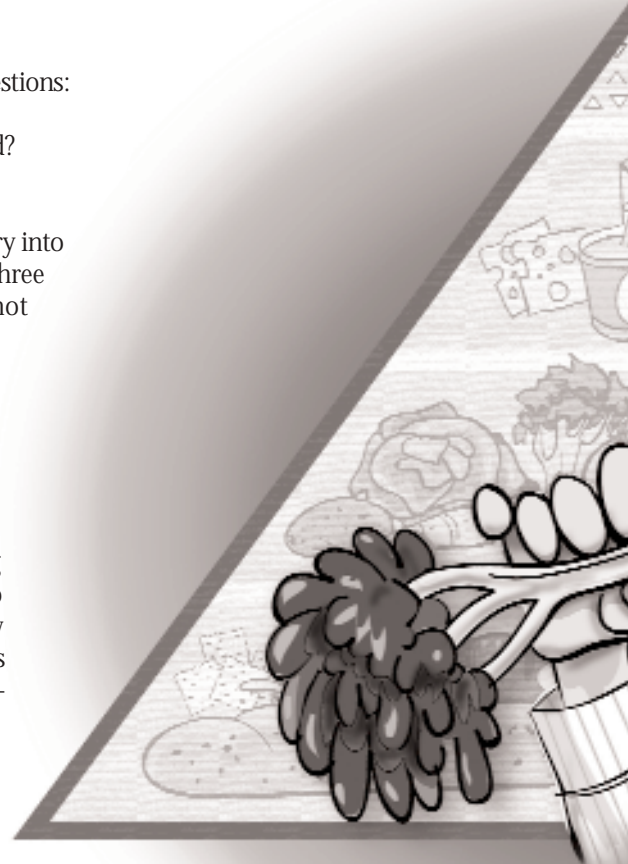
this second reason is probably rooted in a sense of being overwhelmed. So much is available that *could* be read, that deciding which selections *should* be read is no simple task. The solution is to stop trying to find the perfect starting point. Starting *somewhere* is better than not starting at all. The Harry Potter books teach more about courage, teamwork, and leadership than many management textbooks. All you really need to do is find a topic that interests you, find a book on that topic (your local librarian, bookstore clerk, or Internet search engine can help), and read it. It actually is that simple.

Of course the other solution is to ask for suggestions. Family, friends, and co-workers might be able to point you in the direction of an interesting book or magazine. Or check out *Books That Shaped Successful People*, edited by Kevin Kelly, to see what books various entertainers, professional athletes, politicians, and historical figures recommend.

### I Don't Think reading Makes a Difference

The cynical opinion that time spent reading is wasted cannot easily be defended, except perhaps in the case of people who only read material that is not worth reading. In their case, the suggestions in the previous paragraph and the sidebar apply.

Reading matters a great deal. Don't take my word for it—ask professor Warren Bennis who wrote, "How can executives become more enlightened? I would suggest that executives read more." I 'm sure Bennis would not object if we expand his advice to include human beings in general and not just executives. If enlightenment and wisdom are instrumental elements of success, then surely reading makes a difference.

Perhaps the hesitation is grounded in a fear that we can't remember much of what we read. Fortunately, the 19th Century English essayist Sydney Smith addressed this point when he wrote:

"It is no more necessary that a man should remember the different dinners and suppers which have made him healthy, than the different books which have made him wise. Let us see the results of good food in a strong body, and the results of great reading in a full and powerful mind."

> **"It is no more necessary that a man should remember the different dinners and suppers which have made him healthy, than the different books which have made him wise. Let us see the results of good food in a strong body, and the results of great reading in a full and powerful mind."**
>
> —19th Century English Essayist Sydney Smith

Certainly a number of other reasons explain why some people do not read. Time and space limitations preclude evaluating and dismantling the arguments of those non-readers within the confines of this article. Rather than con-

tinue the previous trajectory, let's turn to our second question. What can be done about it? How can readers help non-readers discover the personal and professional benefits of reading?

### Encourage Reading on the Job
Wouldn't it be nice if it was a matter of policy that every person in the organization should spend 30 minutes of work time each week reading something? Thirty minutes is a mere 1.25 percent of a 40-hour workweek, and most of us probably spend more time than that walking to and from our vehicles. Thirty minutes is probably too little time, but it's a start, particularly for those who think they get less time each day than the rest of us.

Few of us have the authority to set that kind of policy, of course. However, you don't have to be the boss to make this work: you can suggest it to the boss and let him or her turn it into a policy. But unless there is a policy *against* reading,

most of us can carve out a few minutes each week to curl up with a good book.

### Create a Library
This doesn't have to be a massive undertaking—any collection of relevant, interesting books will do. Secure some shelf space for your favorites and spread the word that they are available for borrowing. (If you ever want to see them again, you'll probably want to have some kind of sign-out sheet, and even then

> **Reading is a vital component of personal and professional growth. Those of us who recognize its value can and should help point our less literate brethren in the right direction, but ultimately the responsibility is theirs.**

you can count on losing a few, but this might be a small price to pay if it results in a more literate work environment.)

### Pass Along Useful Articles and Books
Just kidding. Giving reading material to someone who doesn't read will only result in someone who doesn't read having one more book or article stashed away somewhere—unread. To manipulate a familiar adage, "You can lead a horse to water, but if he doesn't drink, that'll be one thirsty horse later."

A better approach might be to pass along recommendations and reviews and leave it to the individuals to decide what they want to read. Of course, if you know someone is already a reader, then passing along relevant material is a fine and noble act. But if we're trying to encourage reading among non-readers, this approach is equivalent to teaching a pig to whistle.

### Write Stuff That is Worth Reading
Previous assertions about the vast quantity of reading material aside, there exists an unfortunate percentage of literature that is *not* worthwhile. It can be painfully dull, entirely irrelevant, dangerously incorrect, or it may have any number of other deadly flaws. So if you want to encourage the people around you to become better readers, you might have to take matters into your own hands and write something lively, interesting, accurate, and relevant yourself. Everyone has a story to tell—perhaps a lesson learned the hard way, a successful approach to a difficult problem, or an analysis of a particular activity. If you can make it occasionally funny, so much the better. Non-readers are more likely to read an article if they know the author. And once they read one, they just might read another.

### Reading—An Investment in Yourself
Reading is a vital component of personal and professional growth. Those of us who recognize its value can and should help point our less literate brethren in the right direction, but ultimately the responsibility is theirs. In our busy lives, it can be difficult to make the time to read, and in the Information Age it may seem a monumental task to sift through the masses of available reading material. Let there be no doubt that overcoming these difficulties is a worthwhile endeavor for every human being. Reading is indeed a lifelong investment in yourself.

**Editor's Note:** The author welcomes questions or comments on this article. Contact him at WardD@nima.mil.

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# Tools for a Smarter Acquisition Strategy

## Introducing "SSPIM"—Single Source Pricing Investment Model

BRIAN GEARY • JANICE GRAHAM • RALPH GROEMPING •
NEIL O'BRIEN • LAMAR WILLIS

T he long-awaited release of the Department of Defense Transformation Planning Guidance (TPG) was merely the next step in a long series of documents and studies to depict DoD's desperate need for a more thoughtful and analytically based acquisition investment strategy.

According to the April 2003 TPG, "a priority element of the Department's corporate transformation strategy is reform of the acquisition process." Specifically, the TPG's stated goals are to reduce acquisition cycle time; align acquisition with a new capabilities-based resource allocation process; pursue transformational business and planning practices, such as adaptive (vice deliberate) planning; and develop a transformed analytic capability that can identify and assess risks for strategic planning.

While there remains a long and bureaucratically painful road ahead before any of these worthy goals can be achieved, the Department of the Navy (DoN) has recently begun to implement some of the difficult steps toward a more analytically based acquisition investment strategy. The Navy's Single Source Pricing Investment Model (SSPIM)—formerly known as RADSS, Resource Allocation Decision Support System—is a hopeful step toward achieving Defense Secretary Donald H. Rumsfeld's goal of transforming the defense acquisition process. Moreover, the full po-

*Geary, Graham, Groemping, O'Brien, and Willis* are members of the Strategic Planning Group, Information Spectrum, Inc., an Anteon Company, Arlington, Va.



A starboard view of the guided missile destroyer *USS Arleigh Burke* (DDG 51).
DoD photo

tential of this tool to help DoN realize other goals listed in the TPG is only now being conceptualized.

The question SSPIM was designed to answer is not a trivial one. Simply stated: How can one determine the most efficient economic procurement profile across any portfolio of acquisition programs? A proof-of-concept study was initiated in 2000 by the Assistant Secretary of the Navy for Research, Development and Acquisition (ASN [RD&A]) to analyze the economic concept of Economic Order Quantity (EOQ) and its use within DoN's acquisition process. The study confirmed the hypothesis that significant savings and better decision making could be attained by using the EOQ concept. Later, SSPIM was developed to systematically determine the most economically efficient acquisition profile under existing constraints.

## What is SSPIM?

In essence, price optimization is discovered by assessing the relationship between cost and quantity. For example, how does unit cost change as procured quantities change? SSPIM analysis provides what is called an "EOQ Factor," which is a measure of a program's economic "elasticity." Programs that are considered "elastic" have a relatively large change in unit cost per change in quantity. "Inelastic" programs behave conversely, so that a change in quantity results in a relatively small change in unit cost. So when decision makers take into account a program's EOQ Factor and thereby discover the program's economic efficiency range, buy rates can be adjusted accordingly to maximize the program's cost effectiveness. In essence, the EOQ analysis produces data that identify procurement cost impacts over a range of production

assessing the cost of deferring acquisitions, comparing alternative investment or divestment strategies, and determining the cost of alternative programming decisions.

Programs of a similar nature, such as weapons programs, can be aggregated and analyzed as portfolios to find the



The F/A-18E/F Super Hornet prepares to land on the deck of *the USS Harry S. Truman* (CVN 75). Because the Super Hornet is a carrier-based aircraft, it is equipped with a tailhook that will catch one of the four steel cables stretched across the deck, bringing the plane to a complete stop in about 320 feet.

Photo courtesy Boeing Media
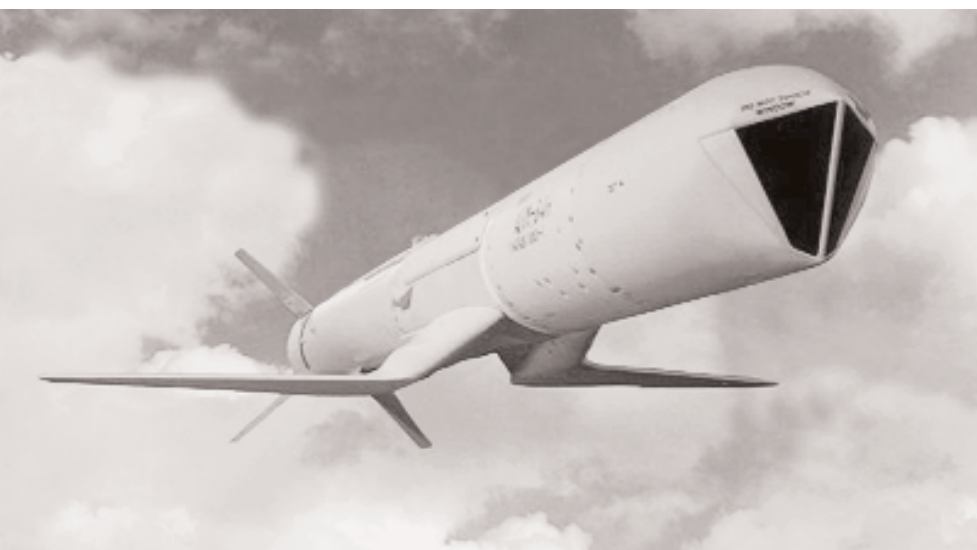


SLAM-ER—Standoff Land Attack Missiles-Expanded Response
Photo courtesy Boeing Media

> **Fundamentally, SSPIM creates an acquisition economic database that functions as a single source for current, standardized pricing information, thereby obviating the need to search elsewhere for cost information or to conduct redundant data calls.**

levels, enabling decision makers to comprehend the economic implications of a variety of alternative procurement options.

During the two years that followed the proof-of-concept study, SSPIM was developed into an operational capability and is now a DoN-standardized, Web-based decision support tool for the acquisition community. Resource sponsors within the Navy staff use SSPIM to

help structure their programs and to analyze alternatives.

Fundamentally, SSPIM creates an acquisition economic database that functions as a single source for current, standardized pricing information, thereby obviating the need to search elsewhere for cost information or to conduct redundant data calls. Once the data are compiled, users of the database are able to conduct numerous analytical functions, such as

most economically efficient mix of all program buy rates. And ultimately, *all* acquisition programs can be aggregated in order to determine the most economically efficient acquisition profile for the current year, for the Future Years Defense Plan (FYDP), or for some other

# Ask SSPIM

The following are typical questions SSPIM can be used to answer:

- How much can I save or lose by changing the procurement profile?
- By changing procurement rates, how much will the unit cost change?
- What effect does buying more in the current year have on the unit cost in future years?
- How much can I save if I cut the program to its minimum sustaining rate?
- Is a given procurement profile more or less efficient than the program of record?
- Given annual budget constraints, what is the most efficient procurement profile?
- How much can I save across all programs by changing the annual quantities bought in each year while maintaining the same program total buy?
- If I increase the total budget, how should I spend that money in order to maximize the amount of program I buy?
- Which programs can I reduce to their minimum sustaining rate to find significant savings elsewhere?

predetermined period. Analytical functions are being added continually as users identify additional requirements.

Already the impact of this tool on the Navy's acquisition profile and budget has been considerable. Three Naval programs—SLAM-ER, DDG-51 and the F/A-18 E/F—serve as excellent examples of what resource savings are possible when a more analytically based tool is used to frame the acquisition investment strategy.

### SLAM-ER
SSPIM analysis was used to demonstrate how the Navy could accelerate the buy of 41 SLAM-ER precision-guided munitions in fiscal 2002 *and save $20 million in procurement costs* over the life of the program. The chief of Naval Operations (CNO) then used the SSPIM analysis in testimony before Congress to illustrate the Navy's budget priorities, and thereby obtained congressional approval to procure the extra 41 SLAM-ER missiles.

### DDG-51
During the fiscal 2002 budget process, SSPIM was used to determine the most economically efficient acquisition decision across all programs, given a certain budget increase. Based on the EOQ Factor, it was determined that the greatest economic benefit could be achieved if the Navy were to use these resources to acquire one additional DDG-51 class destroyer. In other words, the economic efficiency of procuring an additional DDG-51 was greater than it would be if these resources were used for other program acquisitions. Armed with these SSPIM data, the Navy was able to secure approval through Congress to acquire the additional destroyer in fiscal 2002.

### F/A-18 E/F
In one of the most explicit examples of how this tool can enable more cost-effective decision making, SSPIM analysis was used to illuminate the unit price implications of adjusting the procurement rate for the F/A-18 E/F aircraft. In the case of the F/A-18 E/F, analysts believed that if production rates were reduced from 45 to 42, cost savings would be commensurate with the purchase

price of the three aircraft. However, the SSPIM analysis indicated that the cost savings would, in fact, be only two-thirds of the purchase price of the three aircraft. In essence, the anticipated savings from a decision to reduce the rate of production *would be partially offset as the result of a corresponding increase in unit price*, and the Navy would be forfeiting three aircraft while saving only the purchase cost of two.

These standout examples of the benefits of the SSPIM are buttressed by the use of the tool during the difficult task of redefining the Navy's acquisition strategy following the events of 9/11. When a plane smashed into the Pentagon that day, many of the offices that were responsible for the Navy's budgeting data were destroyed. After 9/11, the president immediately passed a directive for the military services to assess their ability to respond to the now visible, unconventional threat of terrorism against the U.S. homeland and interests abroad. To be included was an assessment of current acquisition programs and their capabilities to meet this threat.

SSPIM re-created the necessary budgeting information and quickly provided Navy leadership the ability to make informed acquisition decisions and to prepare the required supplemental budget. Afterwards, the director of Programming, Planning, and Development for the CNO cited the SSPIM analysis as "critical" to determining the Navy's post-9/11 acquisition strategy for precision weapons.

On the heels of this effort, the CNO used SSPIM analysis in several ways. During the Navy's divestiture proceedings, the process was part of the hunt to find savings across the FYDP. In a number of major programs, SSPIM analysis revealed flyaway unit cost growth and hidden costs in component programs. Recently, the deputy chief of Naval Operations (Naval Warfare) used SSPIM to alter the procurement profile of the H-1, MH-60R, MH-60S, and V-22 aircraft to determine the best overall procurement profile for the PR-05 budget build. To enhance the budgeting process, the Navy is currently working to integrate

the SSPIM tool into the Programming and Budgeting Information System (PBIS). Clearly, the potential of this tool is eye-opening.

## Adding Transparency to Navy Programs

Yet historically, eye-opening tools that add transparency to the defense acquisition process have not all been welcomed! Indeed, in some instances—particularly during the first year of implementation—this has been the case with SSPIM. As a result of congressional directives during the 1980s, Navy program offices were redesigned with the intended effect of separation, accountability, and reassertion of civilian control. As expected, some program offices were hesitant and even unable to provide accurate and complete cost data so crucial to producing effective SSPIM analysis.

The ability to obtain reliable and timely cost data from program managers was an initial hurdle in implementing the SSPIM's capability into the Navy. Some of the program data submitted for use in the SSPIM were not consistently standardized across programs and not sufficiently detailed for the model to produce reliable information upon which critical acquisition decisions could be based. Up to this point, some program offices—particularly the smaller offices—had not routinely generated such information.

Now, with each new data call, the ability to provide accurate, consistent, and timely cost data for inclusion in SSPIM becomes less taxing as program offices grow accustomed to accumulating and providing such information.

Clearly, the Navy's adoption of the SSPIM tool has added transparency to the service's budgetary process. The degree of transparency is predetermined and controlled within SSPIM to ensure the integrity of the programming and budgetary process. It has accomplished this by bringing data from multiple program offices to a consistent standard and granularity in order to make comparisons and trade-offs feasible.

Now program offices provide data sets that are subjected to multiple automated validation rules embedded in SSPIM. This capability flags internal inconsistencies in a program's data and provides program offices with the opportunity to clarify their data. As a result, a wealth of knowledge becomes embedded in the procurement system so that it can be more purposefully deployed to improve programming decisions.

## Expanding SSPIM's Capabilities

Several areas exist where the SSPIM capability could readily be expanded (in some areas, expansion is already under way), thereby causing the tool to evolve into an even more valuable decision-making aid. For example, the SSPIM capability could be expanded to provide a single measure of overall acquisition efficiency across all programs. This expanded capability would provide several additional benefits. Real-time impact analysis of any changes made to the acquisition profile would be available to decision makers. Similarly, decision makers would be able to quantify potential efficiencies achievable through acquisition profile restructuring. Expanding this capability would enable Navy leadership to quantify the long-term cost to programs whenever decisions are made in the interest of short-term FYDP expediency. Finally, it would provide Congress with visibility of the Navy's efforts to increase acquisition efficiency.

Another potential development option for the SSPIM is to factor into the analysis the primary existing risk factors within acquisition programs that potentially could lead to significant cost growth. Once the risk factors are identified, an associated risk estimate could be quantified and then incorporated into the program's overall cost estimate. Having this capability would enable decision makers to forecast risk and more realistically estimate a program's *likely true cost*, thereby structuring a more sustainable acquisition profile.

One of the most needed and potentially useful ways in which to expand the capability of the SSPIM tool would be to

enable the model to account for a program's total ownership cost. Incorporating into the SSPIM analysis such items as the following would provide decision makers the ability to assess a program's true life-cycle cost: operations and support costs; research, development, test, and evaluation costs; and disposal costs. With this capability, decision makers would be aware of the full implications of any schedule change to a program. Perhaps even more important in a bud-

> **The question SSPIM is designed to answer is not a trivial one. Simply stated: How can program managers determine the most efficient economic procurement profile across any portfolio of acquisition programs?**

get era where divestiture decisions are becoming increasingly common, this added capability would provide decision makers with data on the costs of maintaining legacy systems vs. the costs of accelerating new programs.

## What Can SSPIM Do for the Operator?

The economic benefits of the SSPIM tool are substantial and beneficial in their

own right. Yet, as has been noted by an increasing number of the Navy's operational staff, lacking from the model is the ability to conduct any type of *integrated economic and operational* program assessment. Indeed, many individuals familiar with the SSPIM suggested that the most useful application of the tool would be the ability to incorporate capabilities assessments for individual programs. In the current environment, no precise approach links and assesses operational requirements, capabilities, and resources.

The difficulty has been the ability to relate the derived capability assessment to a budget in such a way as to enable a coherent basis for trade-off analysis among competing programs within a defined capability universe. Adding to the equation a parameter that would factor in a program's marginal utility as it relates to operational requirements and capabilities would account not only for the program's economic attributes, but also its importance relative to what are known as Mission Capability Packages (MCPs). MCPs outline the operational capabilities and requirements needed to fulfill all assigned missions in accordance with the warfighting requirements of *Naval Power 21.*

Now all programs currently being procured could be aligned and prioritized within an MCP. By analyzing the marginal contribution of individual programs to MCPs, relative priorities could be determined. It would thus be possible for decision makers to rank desired programs within each MCP based on operational as well as economic factors.

Through the use of this methodology, a procurement strategy could be developed over the FYDP consistent with requirements, capabilities, and economic constraints. This capability would be *invaluable* during the budget build process and the development of the Integrated Strategic Capabilities Plan. In essence, the Navy would have a decision-making tool to identify areas of strategic risk with respect to both economic and operational capability shortfalls.

### Can We Grow SSPIM to its Full Potential?

Over the past two years, with the leadership and support of the ASN(RD&A) and the Navy staff, the SSPIM tool has developed into the Navy's definitive database for performing economic trade-off analysis and cost optimization. Even so, this decision-making tool's full potential to help the Navy acquire the best possible technology at the optimum cost to meet its required operational capabilities has not been reached.

The development costs for the SSPIM tool have been recouped many times over in the acquisition resources saved as a result of SSPIM analysis. The minimal development costs that would be incurred to expand the SSPIM tool and enable the capabilities described in this article would also be recouped easily. And fundamentally, the Navy—indeed the Department of Defense, or any other organizations that have a comparable procurement process—would benefit enormously from a tool that enabled *the most informed acquisition decision making possible.* Development of the enhanced SSPIM tool could be a major step forward in Rumsfeld's mandate to transform the defense acquisition process.

**Editor's Note:** The authors welcome questions and comments on this article. Contact Graham at grahjm@ispec. com.

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## HOW MUCH DO COURSES COST?
At this time, DAU does not charge tuition for its courses, except for foreign students who register under a Foreign Military Sales process. This category of foreign student, Department of Transportation-related agencies, industry, and non-DoD federal employees fund their own students' travel and per diem costs. For military and civilian DoD employees, there are no travel or per diem costs to the student or the student's agency to attend DAU courses as long as the proper procedures are followed. The Director, Acquisition Career Management Office (DACM) associated with each DoD agency will cover these costs, and students need to follow their processes.

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Web-enabled courses are strictly computer-based training. The course schedule shows classes running from Oct. 1 to Sept. 30 since enrollment is constant throughout the fiscal year. Once approved for the course, students have 60 days to complete it, 28 days for BCF-102, 90 days for CON-101. After applying, students will receive various messages from "the system," including log on and password information. Students won't be able to log on until they receive a message saying they have a confirmed registration. Students will receive a message telling them whom to contact in case of technical difficulties or questions for an instructor. These messages should be saved for future reference.

Hybrid courses are composed of a Web-enabled phase, lasting about 45 days, followed a couple weeks later by a classroom phase lasting 5 days, except for PMT-352 which lasts 6 weeks. Students must apply for the B phase of a hybrid. They will automatically be enrolled in phase A when they receive a reservation in phase B. Students won't be able to start phase A until about 60 days before phase B starts (45 days for phase A plus 15 days after the Web-enabled phase ends and the classroom phase begins). This is done because the instructor wants the knowledge students acquired in phase A to be fresh in mind when they arrive to class. Students will receive a message telling them whom to contact in case of technical difficulties or questions for an instructor. These messages should be saved for future reference.

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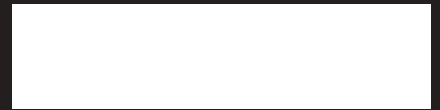
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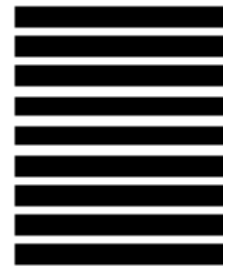
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## DEPARTMENT OF DEFENSE NEWS RELEASE (JUNE 13, 2003)

### TWO DOD CONTRACTING OFFICERS RECEIVE TOP ACQUISITION AWARDS

Two Department of Defense contracting officers were recognized June 12 for their innovative and cutting-edge business practices. Charles Bright, U.S. Special Operations Command, MacDill Air Force Base, Fla., and Nancy Gunderson, Pentagon Renovation Program, received their individual awards at a dinner ceremony as part of the 3rd Annual Federal Acquisition Conference held this week at the Sheraton Premier Hotel, Tysons Corner, Va.
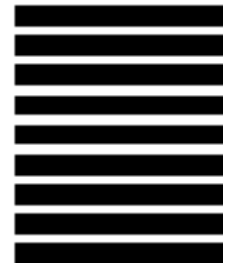
Bright was presented the Ida Ustad Award for Excellence in Acquisition by Steven Perry, Administrator of the General Services Administration (GSA), which sponsors that award named in honor of the late Ida Mae Ustad, a former Deputy Associate Administrator at GSA. Bright was recognized for his significant contributions directly supporting the global war on terrorism and for developing the contract to equip MH-53M helicopters with a new defensive system.

Gunderson received the Elmer B. Staats Young Acquisition Professional Excellence Award from Bill Tuttle of the Procurement Round Table. She is the first-ever recipient of this award sponsored by the Procurement Round Table in cooperation with the Procurement Executives Council. The award is named in honor of the former Comptroller General of the United States. Gunderson was lauded for managing approximately $1 billion in project contracts, including the post 9/11 Pentagon reconstruction, known as the Phoenix Project.

## U.S. ARMY TECHNOLOGY PROTECTION PROGRAM

### OASA(ALT), JUNE 15, 2003

The U.S. Army has initiated the Technology Protection Program (TPP) to regulate the protection of sensitive technologies. The TPP requires technology developers such as engineers and scientists to work together with intelligence and security personnel to develop, execute, and maintain policies and procedures that will protect the Army's sensitive technologies from compromise. U.S. Army CI and Technology Protection Specialists provide focused CI and security support to RDT&E facilities, laboratories, program offices, and test ranges involved in the development of critical technologies.

The Program or Science and Technology Objective (STO) Manager identifies the Critical Program Information (CPI). The STO Manager/PM is responsible for developing a TPP. The TPP will be revised and updated every year or as required by changes to acquisition program status or the projected threat. If you are a STO or PM and need assistance regarding technology protection, contact your supporting intelligence and security office.

*(Ron Duquette, AMSTA-CS-S/TACOM G2, DSN 786-8735, ron. duquette@us.army.mil)*

## ARMY ANNOUNCES VENTURE CAPITAL INITIATIVE (VCI)

### OASA(ALT), JUNE 15, 2003

The Army announced its Venture Capital Initiative (VCI) to satisfy a critical Army technology requirement—obtaining lighter, more efficient power sources for individual soldier systems.

"Power and energy technologies are an opportune area for Army investment, particularly because the Army's interests parallel those fueling the commercial market," emphasized Dr. A. Michael Andrews, Army Chief Scientist.

The goal of the VCI is to jump-start promising technologies in the area of portable power and energy to lighten soldiers' loads as they operate worldwide, often in extreme environments and under austere conditions. It will focus its investment activities on innovative technology companies, including those that may not normally do business with the Army.

For more information, contact Maj. Amy Hannah, U.S. Army Public Affairs at 703-697-4314. This document is available on ArmyLink, a World Wide Web site on the Internet at http://www.dtic.mil/armylink.

*(Charlie Gulac, SAALT/ALION, 703-601-4110)*

## AIR FORCE PRINT NEWS (JUNE 18, 2003)

### AIR FORCE WINS DOD VALUE ENGINEERING AWARDS

WASHINGTON (AFPN)—The Air Force is the recipient of three Department of Defense Value Engineering Achievement Awards. Dr. Glenn F. Lamartin, Defense Systems Director for the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics, presented the awards during a June 18 ceremony at the Pentagon. The Air Force recipients are:

- Program/Project Category: Minuteman III Guidance Replacement Program, Intercontinental Ballistic Missile System Program Office, Hill Air Force Base, Utah.
- Individual Category: Helen M. Rico, Air Force Research Laboratory, Rome, N.Y.

- **Organization Category:** Global Command and Control System, Air Force Transition Team, Electronic Systems Center, Hanscom AFB, Mass.

Value engineering is a process used to analyze functions in hopes of identifying ways to reduce the production or operations cost of systems, equipment, facilities, services, or supplies. The goal is to reduce total cost of ownership while retaining required system performance and quality, according to officials.

During fiscal 2002, more than 3,250 in-house proposals and contractor-initiated change proposals were accepted with projected savings of more than $2.5 billion, officials said.

## DEPARTMENT OF DEFENSE NEWS RELEASE (JUNE 20, 2003)
### DOD SELECTS MINORITY INSTITUTIONS FOR GRANTS

The Department of Defense today announced plans to award 25 grants totaling $6.3 million to minority institutions. These grants represent the final phase of the fiscal 2003 DoD Historically Black Colleges and Universities and Minority Institutions Infrastructure Support Program. The grants will enhance programs and capabilities at these institutions in scientific disciplines critical to national security and DoD.

This announcement is the result of merit competition for infrastructure support funding conducted for the Office of Defense Research and Engineering by the Army Research Office, the Office of Naval Research, and the Air Force Office of Scientific Research, in response to a broad agency announcement issued in November 2002. The fiscal 2003 program solicitation received 43 proposals among which 22 were to establish long-term centers of excellence, and 21 requested instrumentation or equipment to enhance science, mathematics, and engineering (SME) programs.

Among the proposed awards are four new centers for SME research and education and 21 equipment grants. The centers will be supported for three to five years at approximately $0.8 million per year. Equipment grants are for 12-month periods and will range from $58,000 to $180,000.

Since 1992 the infrastructure support program has provided more than $170 million to minority institutions for program enhancements in science, mathematics, and engineering. The program goals include increased participation of minority institutions in defense research and an increase in the number of underrepresented minority graduates in the fields of science, mathematics, and engineering.

Awards will be made only after written agreements are reached between the Department and the institutions. The list of recipients is available online at: http://www.defenselink.mil/news/Jun2003/d20030620hbcu.pdf.

## AMERICAN FORCES INFORMATION SERVICE (JUNE 20, 2003)
### BUSINESS LEADERS SALUTE TROOPS, DEFENSE SECRETARY

Linda D. Kozaryn

WASHINGTON, June 20, 2003—More than 750 of the nation's top business leaders turned out in black-tie June 19 to pay tribute to the nation's men and women in uniform and the man who leads them, Defense Secretary Donald H. Rumsfeld.

"There's a class of people who, when all else fails and the nation must resort to armed force, come forth to execute the nation's policies," retired Air Force Gen. Charles G. Boyd said at the Eisenhower Awards Dinner, sponsored by Business Executives for National Security.

BENS, a national, nonpartisan organization, works to make America safe and secure. BENS members are senior executives who help the Pentagon, Congress, and the White House develop new solutions to national security challenges.

Each year, the group honors one American with the Eisenhower Award. BENS founder Stanley A. Weiss presented this year's award to Rumsfeld.

First presented in 1986 on the 25th anniversary of President Eisenhower's farewell address, the award recognizes those Americans whose contributions to the country best reflect Eisenhower's definition of security as "the total product of our economic, intellectual, moral, and military strength."

Past award recipients include former Defense Secretaries William Perry and William Cohen, and Army Gen. Hugh Shelton, former chairman of the Joint Chiefs of Staff. Last year's recipient was National Security Adviser Condoleezza Rice.

## U.S. ARMY NEWS RELEASE (JUNE 30, 2003)
### ARMY APPROVES NEW BUSINESS INITIATIVES TO ENHANCE ARMY AND DOD CAPABILITIES

The Army Business Initiative Council has approved 16 new business initiatives as part of the process to identify and implement business efficiencies and reforms.

The approval marks the fifth time the Army BIC has met since Secretary of Defense Donald Rumsfeld created the BIC process for the Department of Defense in June 2001. The Army and DoD councils both focus on identifying ways to streamline cumbersome directives and lengthy staffing processes to spend resources more wisely.

Of the 16 initiatives, seven have benefits that extend beyond the Army to all military services and will be submitted to the DoD BIC for review.

The approved Army initiatives include:

• Promoting the use of standardized batteries to improve battery availability in times of increased need and encouraging the use of rechargeable batteries in combat situations.
• Standardizing parts throughout the Logistics system, with a specific focus on the eight different models of trailers in the current inventory.
• Streamlining and automating the process for determining Army family members' eligibility for services, creating a more transparent and less paper-intensive process that uses a Web-based, user-friendly environment.

Don Tison, executive director of the Army BIC, noted that any cost savings realized from these initiatives are retained by the Army organization that proposed them. "This encourages innovative thinking within Army organizations that result in increased efficiencies and effectiveness," said Tison. "Through the Army BIC we have developed a military culture that rewards innovation, improves the way it does business, and saves time and money, which goes right back to the Army's warfighters—our soldiers and civilians," said Tison.

The Honorable Les Brownlee, Acting Secretary of the Army, chairs the BIC. To date the Secretary of the Army has approved a total of 66 BIC initiatives. A complete list of Army-approved initiatives can be found at http://www.asafm.army.mil/bic.asp.

## DEPARTMENT OF DEFENSE NEWS RELEASE (JULY 11, 2003)
### DOD RECEIVES NEW CAPABILITIES DEVELOPMENT SYSTEM

A program designed to help Defense Department officials determine what programs and projects to acquire to enhance joint readiness debuted this week. The Joint Capabilities Integration and Development System, or JCIDS, replaced the existing Requirements Generation System. Approved by Air Force Gen. Richard B. Myers, Chairman of the Joint Chiefs of Staff, JCIDS is a result of Secretary of Defense Donald H. Rumsfeld's goal of transforming the DoD's business practices and warfighting capabilities. According to joint staff officials, JCIDS is designed to foster efficiency, flexibility, creativity, and innovation in the acquisition process.

JCIDS enables organizations to define their capability needs while still focusing on national strategy. Under the new program, operators and materiel providers will work together early in the acquisition process to propose materiel solutions that satisfy capability shortfalls more effectively. The system supports DoD's aim of providing equipment that is used throughout each of America's armed services and that best meets the needs of future warfighters.

Officials from the Joint Staff, the Office of the Secretary of Defense and more than two dozen organizations in and out of DoD worked to develop JCIDS.

The new CJCS Instruction 3170.01C and CJCS Manual 3170.01 can be found on the Web at http://www.dtic.mil/cjcs_directives. For more information, contact Joint Chiefs of Staff Public Affairs at (703) 695-7678.

## DEPARTMENT OF DEFENSE NEWS RELEASE (JULY 17, 2003)
### NAVY ANNOUNCES CONTRACT AWARD FOR DESIGN OF SHIP

General Dynamics–Bath Iron Works, Bath, Maine; Lockheed Martin Naval Electronics & Surveillance Systems–Surface Systems, Washington, D.C.; and Raytheon Co., Integrated Defense Systems, Portsmouth, R.I., are each being awarded a contract for the performance of Flight Littoral Combat Ship (LCS) preliminary design. Each contractor will perform a seven-month preliminary design effort to refine its proposed littoral combat ship concept.

LCS will be a high-speed ship designed for fighting in littoral or coastal areas. LCS will feature an advanced hull form and a shallow draft and will be capable of quickly moving through the littoral at speeds of up to 40 to 50 knots. Operating close to land, LCS will enhance the capabilities of the Navy's larger multi-mission surface ships such as the planned next-generation destroyer and cruiser and today's fleet of Aegis warships.

By adding mission module packages to LCS, commanders will tailor the ship to combat threats most often found in the littoral: naval mines, diesel submarines, and small fast surface craft.

Each LCS will also have inherent capabilities regardless of the mission module package with which it is operating. Each ship will be able to defend itself from attack; conduct intel-

ligence, surveillance and reconnaissance missions; support joint special operations forces; provide joint mobility in the littoral; interdict other ships; and defend the homeland. To enable this capability, LCS will be networked to share information with other navy ships, aircraft and submarines, with unmanned vehicles, and with units from the other armed services.

"The LCS teams selected represent the best available domestic and international expertise, and reflect strong efforts on the part of industry to provide innovative technologies and operational flexibility for the fleet customer," said John Young, assistant secretary of the Navy for Research, Development and Acquisition. "Our LCS acquisition strategy supports delivery of the first ship as early as fiscal 2007, within five years of program start. Additionally, the modularity and open architecture design planned for LCS will ensure we continue to bring enhanced capability to the Fleet and that we do so more quickly and at a lower cost."

"The future for the U.S. Navy-Marine Corps team requires us to dominate the near land battlespace and provide access for our joint combat team," said Chief of Naval Operations Adm. Vern Clark. "Our enemies will continue to develop asymmetric means to stop us. LCS will be the asymmetric advantage that will allow us to dominate in this critical area. We need this capability as quickly as we can get it to the Fleet."

## DEPARTMENT OF DEFENSE NEWS RELEASE (JULY 23, 2003)
### DOD SELECTS TRIBAL COLLEGES AND UNIVERSITIES FOR GRANTS

The Department of Defense (DoD) announced today plans to award instrumentation grants totaling $2.7 million to 11 Tribal Colleges and Universities (TCUs). These grants will be made under the fiscal 2003 DoD Historically Black Colleges and Universities and Minority Institutions Infrastructure Support Program. The grants will enhance programs and capabilities at these minority institutions in scientific disciplines critical to national security and the DoD.

This announcement is the result of merit competition for infrastructure support funding conducted for the Office of Defense Research and Engineering by the Army Research Office through a broad agency announcement issued in January 2003. The Army Research Office plans to award 11 grants ranging from $76,000 to $400,000, only after written agreements are reached between the Department and the institutions.

The list of recipients is available on the Web at: http://www.defenselink.mil/news/Jul2003/d20030723college.pdf.

## DEPARTMENT OF DEFENSE NEWS RELEASE (JULY 30, 2003)
### NAVY ANNOUNCES DD(X) S-BAND RADAR DECISION

The Navy decided today to use S-Band rather than L-Band technology for the volume search radar that will be on the next-generation destroyer, DD(X). This higher frequency radar will improve the ability of the destroyer to track aircraft and missiles and to counterattack shore-based gun or missile batteries that attempt to strike the ship.

"The shift to S-Band technology is a very carefully considered, logical decision which seeks to ensure every investment dollar is leveraged to achieve near term and long term goals," according to the Assistant Secretary of the Navy, Research Development and Acquisition John Young.

"The decision effectively creates a radar road map for the Navy, which draws on extensive, successful experience with S-Band on Aegis, provides enhanced capability for DD(X) as well as a future growth path, and supports the advancement of radar technology necessary for the CG(X) cruiser. Our industry partners, Northrop Grumman, Lockheed Martin, and Raytheon have been exceptional in working cooperatively to allow this decision to be made, demonstrating their understanding of the benefits to the Fleet and the priority they place on supporting the Navy and Marine Corps."

DD(X) will be designed to perform in multiple warfare areas, and its original missions are unchanged. First and foremost, DD(X) will support joint and allied troops ashore by performing precision strike and fire support. The ship will also be able to fight submarines and other ships and will defend against airborne threats.

DD(X) is not envisioned to perform ballistic missile defense. Its S-Band radar will not have the power output required to fulfill that mission. However, the radar does have the potential to be scaled up in size for possible use on the next-generation cruiser, CG(X), which will have significant ballistic missile defense capability.

The shift to S-Band technology is not expected to impact the major milestones for the next-generation destroyer program. The Navy still expects to award the lead-ship construction contract in fiscal 2005 to support delivery of that ship in fiscal 2011.

The change to S-Band will be effected through a contract modification to the existing DD(X) contract with Northrop Grumman Ship Systems. Raytheon and Lockheed Martin are subcontractors under the contract.

## COURSES

### UPDATE ON DAU FISCAL 2004 SCHEDULE

Schedule negotiations, consultation with the regional campuses, and assignment of instructors is currently in process for the fiscal 2004 DAU course schedule. The Service Components (Army, Air Force, Navy, and DoD) completed their review of a draft schedule in August. Watch the DAU Web site at http://www.dau.mil for the final course schedule.

### NEW CON-353 PILOT UNDER WAY

DAU's new contracting course, Advanced Business Solutions for Mission Support (CON-353) is the new DAWIA Level III Contracting course for contracting professionals. The course will be deployed in October 2003. Two pilots are being held this summer. The course is currently planned to be 8.5 days in length with approximately 16 hours of pre-course assignment work over 30 calendar days. To view the content/layout of the course, go to http://www.dau.mil and click on the right hand side of the screen under "Just Released." E-mail questions and comments to con353@dau.mil.

### DAU TO SPLIT HYBRID COURSES IN FISCAL 2004

Beginning with the loading of the fiscal 2004 schedule (tentatively scheduled for late July 2003), students will be required to register separately for each part of any DAU hybrid course. These courses are ACQ-201A, ACQ-201B, BCF-211A, BCF-211B, CON-104A, CON-104B (CON-104A/B are due to be replaced; however, the new courses are not yet ready to go online), LOG-201A, LOG-201B, LOG-235A, LOG-235B, PMT-352A, PMT-352B, PQM-201A, PQM-201B, SYS-201A, and SYS-201B. The Part A (WEB) of each course will become a rolling admission format and students may take it at any time, as long as the required prerequisites have been completed. There is no longer a time period requirement in which both parts must be completed. However, Part A (WEB) must be completed before a reservation in Part B (RESIDENT) will be approved for any hybrid course.

Students will be required to complete both parts of any hybrid course in order to receive credit for the course toward certification. (Note: The LOG-201A course is delivered in a correspondence format rather than a Web-based delivery.)

### NDIA TO SPONSOR DSAM OFFERINGS FOR INDUSTRY MANAGERS

The National Defense Industrial Association will sponsor an offering of DAU's Defense Systems Acquisition Management (DSAM) course to interested industry managers Nov. 17-21, 2003, at the Adam's Mark Hotel in Orlando, Fla.

DSAM uses the same acquisition policy information provided to DoD students who attend DAU courses for formal acquisition certification. It is designed to meet the needs of defense industry acquisition managers in today's dynamic environment, providing the latest information related to:

- Defense acquisition policy for weapons and information technology systems including discussion of the new DoD 5000 series (directive, instruction, and guidebook).
- Defense acquisition and logistics excellence initiatives.
- Defense acquisition procedures and processes.
- The Planning, Programming, and Budgeting System and the congressional budget process.
- The relationship between requirements generation, resource allocation, science and technology activities, and acquisition programs.

For further information, contact Christy O'Hara (703) 247-2586 or e-mail cohara@ndia.org. Prospective government students must first contact Air Force Maj. Jim Ashworth at (703) 805-5809 or e-mail james.ashworth@dau.mil.

### MASTER OF SCIENCE IN PROGRAM MANAGEMENT (MSPM) DEGREE

Sandra Duerinck-Ribón

We are pleased to announce that the Naval Postgraduate School (NPS), Master of Science in Program Management (MSPM) and the Master of Science in Contract Management (MSCM) are coming to Fort Monmouth, N.J. The MSPM and MSCM programs offer great Acquisition Education, Training & Experience (AET&E) opportunities. The curricula are designed to provide federal civilian employees with the knowledge, skills, and abilities to manage and lead effectively in the federal government acquisition environment. The programs focus on problem solving and decision making within the acquisition environment utilizing case studies, teaming exercises, hands-on applications, active participation, and other similar activities. Additional information on the MSPM and MSCM programs, as well as the Naval Postgraduate School, may be found by visiting by visiting the NPS Web site at http://www.nps.navy.mil.

The tentative start date for the programs is Sept. 29, 2003. Both programs are nine quarters in duration and consist of a combination of video-teleconferencing (VTC) and one-week resident sessions at NPS, in Monterey, Calif.

The MSPM program satisfies the mandatory DAU program management and acquisition logistics course requirements of the Defense Acquisition Workforce Improvement Act (DAWIA) through Level III. It also provides course equivalency through Level II in Test & Evaluation, Systems Engi-

## DAU STRATEGIC PARTNERSHIPS
### DAU AND AMERICAN SYSTEMS CORPORATION FORM STRATEGIC PARTNERSHIP

The Defense Acquisition University (DAU) and the American Systems Corporation (ASC) signed a Memorandum of Agreement (MOU) on June 13, 2003, establishing a strategic partnership to share products and provide services in the areas of Information Technology and Software Acquisition Management. This strategic partnership provides opportunities to improve program performance by enhancing knowledge, understanding, and transparency of the government and contractor roles in acquisition processes.

For more information on this partnership, contact Wayne Glass, DAU Director for Strategic Partnerships, Strategic Action Group, at Wayne.Glass@dau.mil.



Elliot Needleman (left), President and Chief Executive Officer, American Systems Corporation, and Army Col. Ronald C. Flom, Defense Acquisition University Commandant, formalize their strategic partnership at a signing ceremony held at the DAU Headquarters, Fort Belvoir, Va., on June 13, 2003.

Photo by Army Staff Sgt. Kevin Moses

neering, Manufacturing/Production/Quality Assurance, and Software Acquisition. The NPS will accept up to 12 quarter hours (eight semester hours) of transfer credit for graduate courses taken at an accredited college/university that have been evaluated as satisfying one or more of the graduate courses in the MSPM curriculum. The MSCM program degree satisfies DAU mandatory training requirements for Level III certification in Contracting. Completion of the MSCM meets DAWIA requirements for 24 hours of business subjects and 40 hours of continuous learning.

The point of contact for these programs at Fort Monmouth is Sandra Duerinck-Ribón, (732) 427-1695, DSN 987-1695. For more information, please visit the Acquisition Support Center Web site: http://asc.rdaisa.army.mil/.

## PUBLICATIONS
### 2003 AAC CAREER HANDBOOK ONLINE

The 2003 Army Acquisition Corps Career Management Handbook is online. Published by the Army Acquisition Support Center, the handbook is designed to inform new workforce members and to act as a reference guide for the more experienced. It clearly outlines the unique requirements for members of the workforce and provides information that will allow them to plan their careers and meet their goals. Download the handbook from the Acquisition Support Center Web site at http://asc.rdaisa.army.mil.

### 2003 ACQUISITION EDUCATION, TRAINING & EXPERIENCE (AET&E) CATALOG ONLINE

The 2003 version of the Army Acquisition Support Center's AET&E Catalog is posted to ASC's new Web site. Keep checking the site for updates to this unique educational tool designed just for the acquisition professional. Questions about the catalog may be directed to Randy Williams in ASC's Career Management Division, (703) 704-0102 or e-mail randy.williams@us.army.mil.

### 2004 DAU CATALOG

The Defense Acquisition University expects to publish and distribute the 2004 DAU Catalog in hard copy and online in September 2003. Watch this section of *PM Magazine* for an announcement on the catalog's availability and how to obtain a copy.

# SPECIAL ANNOUNCEMENT
## ACQUISITION CAREER PROGRAM DEVELOPMENTAL ASSIGNMENT

The Army has issued a special announcement of developmental assignments in multiple functional areas at Headquarters Department of the Army (HQDA) supporting the Department of Defense and/or Army Business Initiative Council (BIC).

POSITION: GS 12-15 or military equivalents in any occupational series in Resource Management; Acquisition Management; Test and Evaluation; Manpower and Personnel; Installation Management; Logistics, and Information Management.

ASSIGNMENT DESCRIPTION/DUTIES: This will be a training assignment in one of the functional areas of the Army or DoD Business Initiative Council (BIC) support team. The BIC is chartered to improve the efficiency of business operations by implementing reforms throughout the DoD or Army that allow savings to be reallocated to higher priority efforts. The BIC serves as the corporate board of directors for these reforms. It is chaired by the Under Secretary of Defense for Acquisition, Technology and Logistics, and comprises the Service Secretaries and OSD and OJCS representatives. The developmental assignments will be primarily in support of the Process Function Boards (PFBs) that support the DoD and Army BIC processes. These boards are: Manpower and Personnel, Resource Management, Information Technology, Acquisition Management, Test and Evaluation, and Installations and Logistics. The Installations and Logistics board has three functional components: ASA I&E, ACSIM and G4. Duties will include managing administrative actions of the individual boards, helping to analyze and coordinate technical information related to functional areas, and working as a liaison between the support team, the functional boards and the BIC initiative champions.

AREA OF CONSIDERATION: Department of the Army employees in the following categories (selectees will be assigned at present permanent grade level):
- On permanent appointment to the competitive service.
- Excepted service or non-appropriated fund employees with competitive status.
- Eligible for competitive conversion or appointment to the competitive service, e.g., family members eligible under EO 12362 as amended.

TOTAL NUMBER OF POSITIONS: up to 15
LENGTH OF PROGRAM: 3-12 months
LOCATION OF ASSIGNMENT: HQDA, Pentagon, in various staff support elements. If a selectee is from outside the commuting area of the developmental assignment, the costs of the travel and up to 55 percent of the maximum payable local per diem will be centrally funded.

To read the full announcement, go to the Army Acquisition Support Center Web site at http://asc.rdaisa.army.mil and scroll down to the bottom of the page.

## DEPARTMENT OF DEFENSE NEWS (RELEASED JULY 30, 2003)
### NEW SUPPLY TRANSPORTATION FELLOWS PROGRAM ESTABLISHED

Today, the Office of the Secretary of Defense (OSD) announced the establishment of the OSD Supply and Transportation Fellows Program. This program, now centrally managed, was established through the merger of the Transportation Policy (TP) and Supply Chain Integration (SCI) Professional Enhancement Programs.

The new program is designed to encourage the career development of mid-level DoD logistics professionals, both military and defense civilian employees, who will help lead and manage DoD's Future Logistics Enterprise. For more than 27 years, the separate functional programs trained, mentored, and developed mid-grade supply and transportation professionals to assume higher levels of leadership and responsibility within DoD's supply and transportation organizations.

The program builds upon the successes of the original program and still retains many of its features; however, the objective of the new program is to expose participants to all aspects of strategic logistics including total life cycle systems management, end-to-end customer support, and enterprise integration.

The program begins in July and is one year in length. For a period of six months, military and defense civilian participants are integrated into the OSD TP and SCI offices working on policy formulation and evaluation. OSD works with the fellow's parent organization and the fellow to create a logistics development plan specifically tailored to the participant's career goals and objectives. For the remaining six months, fellows rotate through other senior headquarters elements such as the Services' logistics staffs and materiel commands, the Defense Logistics Agency, the Military Traffic Management Command, and/or the Military Sealift Command.

The program provides a unique opportunity for the participants, exposing them to the full spectrum of logistics at both the Department and Service/Agency level. The knowledge taken from their experiences is infused back into their parent organizations and the logistics community as a whole.

The program is professionally challenging, but rewarding. The Department seeks only highly motivated military and civilian logisticians that have demonstrated senior leadership potential.

Nominations for the 2004-2005 program will be accepted in March 2004. Additional information can be found on the Web at: http://www.acq.osd.mil/log/logistics_materiel_readiness/organizations/tp/html/tranmgt.html.

## U.S. ARMY ACQUISITION CAREER EXPERIENCE PROGRAM

The National Capital Region Customer Support Office is pleased to announce the results of the U.S. Army Acquisition Career Experience (ACE) Competitive Selection Board. Congratulations to the following students who were selected for the Summer 2003 ACE Program. They will be working at various acquisition organizations within the NCR.

Melissa Barbour; Kevin Boucher; John (Jack) Donohoe; Jeffrey Evey; Erica Harris; Nathan Howell; James Jacobs; John Jett; Justin Leach; Brendon Merchant; Makayla Nguyen; Kevin Sneddon; and Quenna Turner.

The ACE Program is a two-year, paid academic/government summer employment program sponsored by the Deputy Director, Acquisition Career Management and the Acquisition Support Center. The program is intended to recruit full-time undergraduate sophomore and junior college students from various scholastic disciplines that underpin the acquisition career fields. The goal of the program is to give the students a realistic job preview and encourage them to consider the Department of the Army as a career choice after graduation. During the program, the student works with a mentor to learn acquisition-related issues and challenges.

For additional information on the ACE Program, please go to the U.S. Army Acquisition Support Center Web site at: http://asc.rdaisa.army.mil/programs/ace/default.cfm.

## U.S. ARMY ACQUISITION SUPPORT CENTER (ASC) NORTHEAST AND CENTRAL REGION SPLASH PAGE
OASA(ALT) JUNE 15, 2003

The U.S. Army Acquisition Support Center (ASC) Northeast and Central Region Splash Page is finally here! You can find the Splash Page at https://www.kc.us.army.mil/asc. A Knowledge Center password is required to gain access. The Splash Page will eventually be linked with the various Knowledge Centers, including AKO (Army Knowledge Online) at https://www.us.army.mil/portal/portal_home.jhtml.

This site will provide collaborative work areas, easy access to information, communication between members regardless of their physical location, and a centralized location for all members to share. Career Managers will be able to disseminate information to each other without having to clog up the e-mail system.

Search the Splash Page for information on the Regional Acquisition Education, Training and Experience (AET&E) program, DAU announcements, Army Acquisition Corps (AAC) membership, publications and journals, or find the subject matter expert for your inquiry. The ASC Splash Page is a wonderful way to enhance knowledge sharing within the ASC and to the local Fort Monmouth acquisition community. In the future, this site will be accessible by all AKO users.

Point of contact for this action is Sandra Duerinck-Ribón, Career Management Support Specialist, ASC, 732-427-1695, or DSN 987-1695.

*(Sandra Duerinck-Ribón/ASC/DSN 987-1695/sandra.duerinck-ribon@mail1.monmouth.army.mil)*

## NEW BRIEF ON KNOWLEDGE SHARING AVAILABLE

To learn about knowledge sharing activities that support DAU's Performance Learning Model, go to the Acquisition Community Connection at http://pmcop.dau.mil and select any community or special interest area shown. In the left hand Topic Explorer window select the folder labeled "User Info and Training." Look under "Presentations" to select the brief entitled *Faculty Contribution Knowledge Sharing Opportunities.* You'll be presented with specific examples on finding, developing, sharing resources/content, and using/interacting/managing online knowledge communities (communities of practice). You'll also find a POC listing for getting involved in positions of responsibility relating to community of practice development/editing.

## MAJOR UPGRADE TO AT&L KNOWLEDGE SHARING SYSTEM (AKSS)

On July 1, AKSS launched a major upgrade, providing the following new or improved functions. Go to http://deskbook.dau.mil.

In the right hand Site Menu you'll see:

- Links to the new Joint Capabilities and Development System (JCIDS) documents
- Expanded list of Glossaries and Acronyms and a Web-enabled DAU *Glossary of Defense Acquisition Terms and Acronyms*

- Expanded AT&L Web site list and new interface that allows access alphabetically and topically
- Expanded and improved Education and Training area
- Improved listing of Software Tools
- Online CD ordering capability
- New listing of Guidebooks and Handbooks

In the left hand Reference Information area, select "Series 5000 Info" to find extensive information on the 5000 Defense Acquisition System and an Interactive DoD 5000 system that helps you navigate more easily through the three documents to find just what you want on a particular subject.

Select the Advanced Search area in the upper right corner to see the expanded search capabilities, including the ability to search just the reference library or the glossary and acronym library, the ability to search within results, and to access enabled info on searches performed and the list of search terms.

## COMMUNITIES OF PRACTICE WEB SITE RENAMED

The Program Management Community of Practice or PM CoP Web site has been renamed Acquisition Community Connection (ACC) and there's a new front page layout. The name change is intended to reinforce the site's function as a place where the entire AT&L workforce and its industry partners can interact and share resources and experiences. The name change will not impact your ability to access the site. User names and passwords remain the same. A new URL will eventually be introduced, but the current URL—http://pmcop.dau.mil—will continue to work.

## LOGISTICS COMMUNITY OF PRACTICE MAKES DEBUT

The Logistics Community of Practice went public on July 21. This is a primary source for logistics policy, processes, formats, examples, tools, training materials, connection to expertise, etc., supported and sponsored by the Services and logistics-related agencies. Go to http://pmcop.dau.mil and click on the Logistics Management Community of Practice (LOG CoP) link.

## ARMY KNOWLEDGE ONLINE (AKO) MOST FREQUENTLY ASKED QUESTIONS

AKO is your passport to Army information, breaking news, documents, Internet communication, and much more. The portal allows soldiers and DA civilians to quickly find and receive the latest knowledge on subjects of their choosing. Portal users gain quick access to Army installation and travel information, training links, the latest

Army news, and other knowledge centers across the Army. All Army members are encouraged to use AKO and its training tools, which make it more serviceable and meaningful to the individual user.

The **AKO Portal** https://www.us.army.mil/portal/portal_home.jhtml is the official knowledge management tool for the U.S. Army. The AKO Portal can be accessed from https://www.army.mil under *Quick Links* by clicking on *Army Knowledge Online* on the right side of the screen. **Before you sign into AKO**, you can learn more about AKO by selecting **"Take the AKO Tutorial–Text Version, –Audio Version"** located under *AKO Help* on the left of the AKO Portal home screen. Three training tools that will help you to increase your knowledge about AKO are the **AKO Tutorial,** the **AKO User Help Guide**, and the **Army KCC Help Guide**.

### AKO Tutorial–Audio Version
HTTPS://WWW.ARMY.MIL/AKO/FLASHTUTORIAL/MEDIA/INDEX.HTML
or
### AKO Tutorial–Text Version
HTTPS://WWW.US.ARMY.MIL/PORTAL/JHTML/HELP/TUTORIAL/TUTORIAL1.HTM

The **AKO Audio and Text Tutorials** will show you how to find AKO community pages, create your own AKO page, send and forward e-mail through AKO WebMail, or connect with your colleagues through AKO instant messenger. Army organizations own and maintain community pages on the AKO portal that can be seen by all users. Each community page consists of several channels tailored to that community and acts as a resource for that organization.

### AKO User Help Guide
HTTPS://WWW.US.ARMY.MIL/PORTAL/JHTML/HELP/USERHELP.HTM

The **AKO User Help Guide** can be accessed by clicking on the "?" icon on every portal screen to get more information on AKO topics. The AKO User Help Guide includes commonly used AKO Portal terms, AKO Frequently Asked Questions, instructions for creating a personal page, using WebMail, and threaded discussions.

### Army KCC Help Guide
HTTPS://WWW.US.ARMY.MIL/PORTAL/JHTML/DC/HELPINDEX.JHTML

The **Army KCC Help Guide** explains the features of the new Army Knowledge Collaboration Center. A Knowledge Center is a top-level "container" in the Army KCC–all Folders

and Files are stored in Knowledge Centers. By creating Knowledge Centers and granting access to other AKO users, you can share files and collaborate on them.

POC is Susan Fisher at susan.fisher@hqda.army.mil.

## DAU CDSC CREATING INTERACTIVE LINKED SET OF 5000 DOCUMENTS

On July 18, Program Management directors Chuck Cochrane and Air Force Maj. Jim Ashworth, assigned to DAU's Curricula Development and Support Center, completed the first phase of a multi-phase project to create an interactive and linked set of 5000 documents.

- Phase I includes access through the DoD 5000 Resource center to the 5000 documents, including the interim guidebook, interlinked as Microsoft Word documents. Phase I also includes some initial linking to references stored in the AT&L Knowledge Sharing System (AKSS).

- Phase II will be a conversion of the Word documents to HTML to provide better navigation, link highlighting, and situational awareness for the user, and the completion of linking to all identified references. Initial schedule estimate for completion of Phase II is Sept.1, 2003.

- Phase III will start with the delivery of the new DoD 5000 Guidebook to DAU for conversion to HTML and linking with the 5000.1 and 5000.2 documents.

- Phase IV will focus on externally linking from the documents to AKSS and Community of Practice resources. Lessons learned from this activity will be used to Web enable the JCIDS Instruction and Manual (CJCSI 3170.01C and CJCSM 3170.01).

## DOD CHANCELLOR'S OFFICE REALIGNED

On July 30, 2003, the Office of the DoD Chancellor for Education and Professional Development was realigned under Civilian Personnel Management Services (CPMS), OSD. The Office of the Chancellor works in conjunction with the OSD Principal Staff Assistants and other DoD Component officials who sponsor or have cognizance over DoD civilian education and professional development activities to en-

sure that appropriate standards of academic quality and cost-effectiveness are met. Dr. Jerome Smith, the current DoD Chancellor, was appointed Oct. 2, 1998.

## PROGRAM EXECUTIVE OFFICER/SYSTEM COMMANDER (PEO/SYSCOM) CONFERENCE WEB SITE

The PEO/SYSCOM Conferences/Workshops are a series of senior-level, invitation-only, non-attribution events that host approximately 400 Department of Defense and industry participants at each event. These fora provide a good opportunity for senior leadership from the Department of Defense and industry to meet and share their views and priorities. The Thirteenth PEO/SYSCOM Commanders' Conference, hosted by the Defense Acquisition University, will be held Dec. 3-5, 2003, at Scott Hall, Fort Belvoir, Va.

For more information on PEO/SYSCOM past and upcoming events, visit the PEO/SYSCOM Conference Web site at http://www.acq.osd.mil/dpap/Conferences/peoindex.htm.

## UPCOMING CAREER-BROADENING CONFERENCES/SYMPOSIA FOR 2003

SEPTEMBER

**Sept.29-Oct. 2: World Standards Week 2003**, Washington, D.C. The U.S. standardization and conformity assessment community will celebrate World Standards Week 2003 with an exciting and varied mix of meetings, events and ceremonies. For more info go to http://www.ansi.org/meetings_events/featured_events/wsw03/overview.aspx?menuid=8.

OCTOBER

**Oct. 6-8: AUSA 2003 Annual Meeting,** Washington, D.C.: "War and Transforming." Go to https://www.ausa.org/www/ia.nsf for more information.

**Oct. 22-24: Joint C4ISR Exchange,** Chicago, Ill. "Building Competency to Assure Freedom." For more info go to http://www.federalevents.com/.

**Oct. 27-30: DoD Maintenance Symposium & Exhibition,** King of Prussia, Pa. "Maintenance: Keystone of Mission Readiness." Sponsored by SAE International. For more info go to http://www.sae.org/calendar/dod/index.htm.

**Correction:** The announcement on p. 76, "DAU ANNOUNCES NEW COMBINED CONTRACTING LEVEL III COURSE," published in the May-June 2003 issue of PM Magazine, is corrected as follows:
Beginning in FY 04, the best of two DAU courses will be combined into one: CON-301 and CON-333 will be combined into a single course—CON 353. This course will be required for Level III certification.

If by Sept. 30, 2003, CON-333 has been completed but not CON-301, then the Level III Contracting DAWIA certification training requirements are satisfied. If CON-301 has been completed, but not CON-333 by Sept. 30, 2003, then CON-353 must be completed for certification. CON-301 fulfills the new DAWIA Level III certification training requirement to complete two electives. The course Web site is http://qp.dau.mil/con353.

## OFFICE OF THE UNDER SECRETARY OF DEFENSE
### 3000 DEFENSE PENTAGON
### WASHINGTON, D.C. 20301-3000

ACQUISITION,
TECHNOLOGY AND
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JUL 29 2003
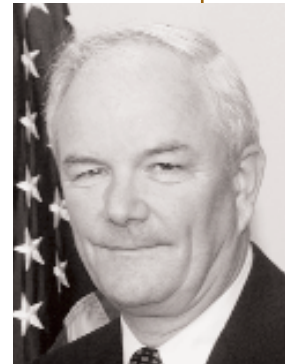
MEMORANDUM FOR: SEE DISTRIBUTION

SUBJECT: Policy for Unique Identification (UID) of Tangible Items—New Equipment, Major Modifications, and Reprocurements of Equipment and Spares

Unique Identification (UID) is a mandatory Department of Defense (DoD) requirement on all solicitations issued on or after January 1, 2004. I strongly encourage the Component Acquisition Executives to incorporate this policy into ongoing contracts where it makes business sense to do so.

Contracts shall require unique item identification, or a DoD-recognized unique identification equivalent, for all property items delivered to the government if: (1) the acquisition cost is $5,000 or more; (2) it is either a serially managed, mission-essential, or controlled inventory piece of equipment, or a reparable item, or a consumable item, or material where permanent identification is required; (3) it is a component of a delivered item, if the program manager has determined that unique identification is required; or (4) a UID or a DoD-recognized UID equivalent is available. Existing government-furnished property provided to contractors is exempt from this policy until January 1, 2005, when this policy becomes mandatory for all government-furnished property incorporated into an end item. Unique identification will complement the Department's existing policy on serialized item management.

Component Acquisition Executives (CAEs) shall ensure their program managers understand the criticality of requiring UID and integrating this change into the appropriate business processes. All program managers for new equipment, major modifications, and reprocurements of equipment and spares shall begin planning to apply UID on tangible items using the attached guidance. Wide Area Workflow (WAWF) will be modified to capture the UID associated with each item. DoD Components are expected to transition rapidly to the WAWF as a mandatory payment requirement by no later than January 1, 2005. I encourage the CAEs to promote and fund pilot programs to apply UID to legacy equipment and their supporting Automated Information Systems (AISs). A Joint Implementation Requirements Board for UID will be established. This Board will focus on business rules for enabling all AISs to use the UID as a primary or alternate key to achieve a globally interoperable network-centric architecture for the integrated management of tangible items.

The Department, along with its industry and international partners, clearly prefers use of constructs described in ISO/IEC 15434 to achieve interoperability in business intelligence. However, this requires ISO approval to add a new format to ISO/IEC 15434 for those ATA Spec 2000 Text Element Identifiers (TEIs) used in UID. The Department values the formal ISO approval process and is preparing to submit a proposal to ISO/IEC JTC1/SC 31 seeking approval of a new format for the TEI addition. That approval process is lengthy, and, in the interim, a collaborative solution is necessary to create a near-term interoperable environment for UID enhancements to business intelligence to support coalition operations. This solution uses the structure of ISO/IEC 15434 as the UID syntax standard and the business rules in the attached Appendix A. If approved, the new format shall be used and replace the interim "DD" format described in this policy. Consideration and decisions on marking approaches should carefully weigh any impacts to changing from the "DD" format to an approved future format against any

associated costs and strategic near-term marking requirements. ISO/IEC 15434 is and will be the Department's preferred approach on all new solicitations. The use of the collaborative solution format as described in the attached Appendix B should strictly be considered an interim approach.

By October 1, 2003, the Director, Defense Procurement and Acquisition Policy will publish an interim rule that modifies the Defense Federal Acquisition Regulations to capture the acquisition cost of tangible items, and place UID on them coincident with their acquisition. A subsequent rule will be issued to finalize government-furnished property requirements prior to January 1, 2005.

A DoD UID Program Management Office will be established to manage UID implementation. The Office charter will have a provision for completing its work and transferring any continuing efforts to the DoD Components. For the time being, the UID Integrated Product Team (IPT) will continue to work on issues in the following areas:

- Participate in the ISO/IEC SC 31 process to obtain approval of an amendment to ISO/IEC 15434.
- Develop policy modifications to MIL-STD-129, MIL-STD-130, DoD 4140.1-R, DoDI 5000.2, DoDI 5000.64, DoD 7000.14-R, CJCSI 3170.1C, DCMA One Book, and MIL Handbook 61A to ensure synchronized policy execution.
- Publish an online users guide on UID requirements and application.
- Determine minimum architecture/systems requirements to capture UID information at inspection and acceptance and identify opportunities for rapid implementation.
- Oversee any UID demonstration programs.
- Develop training and education materials working in partnership with the Defense Acquisition University.
- Conduct outreach and communication to promote adoption of UID by the Department and its industry and international partners.

This guidance supersedes my memoranda of December 19, 2002, and April 4, 2003, where I promised to issue a mandatory UID policy no later than July 2003. Additional information and a DoD Unique Identification Guide are at http://www.acq.osd.mil/uid. The point of contact is Mr. Robert Leibrandt. Please address your questions to him at (703) 695-1099 or by e-mail at robert.leibrandt @osd.mil.

Michael W. Wynne
Acting

Attachments:
As stated

> **Editor's Note:** To view the distribution and download the attachments to Secretary Wynne's memorandum, go to the Director, Defense Procurement and Acquisition Policy Web site at http://www.acq.osd.mil/dpap/.

**OFFICE OF THE UNDER SECRETARY OF DEFENSE**
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ACQUISITION,
TECHNOLOGY AND
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JUN 27 2003

MEMORANDUM FOR DIRECTOR, ACQUISITION RESOURCES AND ANALYSIS

SUBJECT: Annual Report on Metrics for AT&L Goal #2, "Revitalize the Quality and Morale of the Acquisition, Technology and Logistics (AT&L) Workforce"

Attached is subject report covering Acquisition, Technology and Logistics Workforce data as of September 30, 2002. Originally, Goal #2 had nine metrics. In September 2002, the Under Secretary of Defense (AT&L) approved a consolidation of this goal's metrics, reducing the number from nine to five. In April of this year, as the result of a successful survey measuring Workforce Job Satisfaction, Mr. Wynne approved cessation of reporting on that metric. The attached report provides status on the remaining four metrics. My point of contact is Mr. John Michel at (703)681-3541.

Director, Defense Procurement and
Acquisition Policy

Attachment:
As stated

**Editor's Note:** To download Powerpoint slides with information on the remaining four metrics, go to the Director, Defense Procurement and Acquisition Policy Web site at http://www.acq.osd.mil/dpap/ workforce/careermanagement.htm.

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**WASHINGTON, D.C. 20301-3000**

ACQUISITION,
TECHNOLOGY AND
LOGISTICS

JUN 25 2003

MEMORANDUM FOR DIRECTORS OF DEFENSE AGENCIES
     DEPUTY ASSISTANT SECRETARY OF THE ARMY
      (POLICY AND PROCUREMENT), ASA(ALT)
     DEPUTY ASSISTANT SECRETARY OF THE NAVY
      (ACQUISITION MANAGEMENT), ASN(RDA)
     DEPUTY ASSISTANT SECRETARY OF THE AIR
FORCE
      (CONTRACTING), SAF/AQC
     DIRECTOR, DEFENSE CONTRACT MANAGEMENT AGENCY
     EXECUTIVE DIRECTOR, ACQUISITION, TECHNOLOGY,
      AND SUPPLY DIRECTORATE (DLA)

SUBJECT: Class Deviation—Prohibited Sources

  Effective as of the date of this memo, all military departments and defense contracting activities shall deviate from the requirements of Federal Acquisition Regulation (FAR) Subpart 25.7, 25.1103(a), and the clause at 52.225-13, Restrictions on Certain Foreign Purchases, when contracting for supplies or services with a value that exceeds the micro-purchase threshold. Instead, Contracting Officers shall use the attached FAR Subpart 25.7, 25.1103(a), and clause 52.225-13, Restriction on Certain Foreign Purchases (July 2000) (Deviation). When applicable, Contracting Officers shall also insert this modified clause in lieu of the standard FAR clause listed in 52.212-5, Contract Terms and Conditions Required to Implement Statute or Executive Order, or 52.213-4, Terms and Conditions—Simplified Acquisitions.

  This deviation implements Executive Order 13192, Lifting and Modifying Measures With Respect to the Federal Republic of Yugoslavia (Serbia and Montenegro); Executive Order 13268—Termination of Emergency With Respect to the Taliban and Amendment of Executive Order 13224 of September 23, 2001; and the General license issued on May 23, 2003, by the Department of the Treasury entitled, "Iraqi Sanctions Regulations." Contracting Officers are to refer to the above Executive orders and the regulations of the Office of Foreign Assets Control (OFAC) at 31 CFR Chapter V. This deviation removes Serbia, the Taliban-controlled regions of Afghanistan, and Iraq from the list of prohibited sources. The Contracting Officer must check the lists of entities and individuals subject to economic sanctions that are available on OFAC's website at http://www.treas.gov/ofac and may not acquire from such entities and individuals (FAR 25.701(b)).

The Contracting Officer is no longer authorized in unusual circumstances to acquire for use outside the United States supplies or services restricted by this section, unless specifically authorized by OFAC. However, OFAC has granted authority to Department of Defense personnel to make emergency acquisitions in direct support of U.S. or allied forces deployed in military contingency, humanitarian, or peacekeeping operations in a country or region subject to economic sanctions administered by OFAC (see DFARS 225.701-70).

This deviation remains in effect until implemented in the Federal Acquisition Regulation, or is otherwise rescinded. My point of contact is Ms. Amy G. Williams at 703-602-0328 or via e-mail: amy.williams@osd.mil.

Deidre A. Lee
Director, Defense Procurement and
Acquisition Policy

Attachment:
As stated

cc:
DSMC, Ft. Belvoir

**Editor's Note:** To download the attachment to Lee's memorandum, go to the Director, Defense Procurement and Acquisition Policy Web site at http://www.acq.osd.mil/dpap/.

## NEW DOD 5000 SERIES DOCUMENTS RELEASED AND SIGNED

With an eye toward increasing the authority and independence of the program manager, the new DoD 5000 series is now authorized. The new DoD Directive 5000.1 and DoD Instruction 5000.2 are available at: http://www.acq.osd.mil/dpap. They can also be reviewed on the AT&L Knowledge Sharing System (AKSS) Web site at http://deskbook.dau.mil/jsp/default.jsp.

## DFARS TRANSFORMATION

The Defense Federal Acquisition Regulation Supplement (DFARS) Transformation task force is actively seeking input from within the government and from industry with respect to ideas for improvements to the DFARS and the process by which the DFARS is written. The Office of the Secretary of Defense (OSD) has established a Web site to collect ideas from interested parties. The task force is truly open to any and all ideas, and we highly encourage you to take advantage of this opportunity to submit your ideas individually via the Web site at http://www.acq.osd.mil/dp/dars/transf.htm.

Although the initial deadline has passed for submission of proposals, the task force will continue to collect proposals for consideration. Further, proposals will continue to be posted on the DFARS Transformation Web site so that you may view all improvement proposals submitted to date and so you can see what others within the government and industry are recommending.

## CHIEF ACQUISITION OFFICERS

In an assessment of H.R. 1837, the Services Acquisition Reform Act (SARA) sponsored by House Government Reform Committee Chairman Tom Davis, R-Va., the General Accounting Office has endorsed a proposal to create Chief Acquisition Officers at civilian agencies. The bill would require that the top acquisition officials be politically appointed.

The Chief Acquisition Officer provision is one of several measures from SARA included in the House-passed version of the fiscal 2004 defense authorization bill, H.R. 1588.

## "BUY AMERICAN" PROVISION

A "Buy American" provision, spearheaded by Armed Services Chairman Duncan Hunter, R-Calif., has been approved by the House in its fiscal 2004 defense authorization bill. The provision would require that "critical" components of most military systems be acquired from domestic sources. It would also raise the required "domestic content" in a system's labor and materials to 65 percent, from the current 50 percent. And it would require that major defense acquisition programs use only machine tools made in the United States. The measure is now under House-Senate deliberation.

## NEW DOD CAPABILITIES-BASED PROCESS REPLACES THE REQUIREMENTS GENERATION SYSTEM

The Joint Capabilities Integration and Development System (JCIDS) has been approved. JCIDS was developed in close collaboration with the DoD 5000 to foster efficiency, flexibility, creativity, and innovation. JCIDS is defined in Chairman, Joint Chiefs of Staff (CJCS) Instruction 3170.01C and an accompanying CJCS Manual 3170.01. The manual provides guidance on how to frame the analysis and procedures used to identify and document capability gaps. JCIDS will support DoD's aim of providing interoperable joint capabilities that best satisfy the needs of future warfighters. The new system promotes the definition of capability needs by using integrated architectures derived from and responsive to overarching top-level national strategy. JCIDS sets the stage for transition to a process founded on joint concepts and integrated architectures.

Additional training materials on the JCIDS will be available at the DoD 5000 Series Resource Center http://dod5000.dau.mil/ in the near future.

## DEPUTY ASSISTANT SECRETARY OF THE ARMY (POLICY AND PROCUREMENT) NEW WEB SITE
OASA(ALT), JULY 15, 2003

Deputy Assistant Secretary of the Army (Policy and Procurement) (SAAL-ZP) provides a wealth of acquisition policy and procurement knowledge through its new Web site and Army Knowledge Online. The redesigned Web site provides information on each of the SAAL-ZP Directorates, Acquisition Policy, Systems Support and Procurement and Industrial Base Policy. You can access the new site from the Assistant Secretary of the Army for Acquisition, Logistics and Technology/Army Acquisition Executive Web site (https://webportal.saalt.army.mil/) under the Deputy Assistant Secretary for Policy and Procurement. Or go directly to the DASA(P&P) Web site via the Deputy Assistant Secretary of the Army (Policy and Procurement) link (http://dasapp.saalt.army.mil/).

## ARMY ACQUISITION POLICY, ARMY REGULATION (AR) 70-1 RELEASED FOR FORMAL STAFFING
OASA(ALT), JULY 15, 2003

Army Regulation 70-1, Army Acquisition Policy, has been released for formal staffing. This is the final "up-or-down" staffing of AR 70-1, Army Acquisition Policy. "Major input" staffing took place last year. (After receiving all input, the

regulation was put on hold pending the DoD 5000-series rewrite.)

The draft AR is now posted to the Army Knowledge Online (AKO) Web site for review. An automated Data Comment Tracking Database has been developed for submitting comments. Initially, all comments will be submitted using the Data Comment Tracking system. Observations or comments that will improve the regulation are welcome (please be specific); however, be advised that the majority of new information in AR 70-1 is supported by approved policy statements. The OASA(ALT) does not anticipate many changes.

*(James Inman/SAAL-PA/DSN 664-7111/james.inman@saalt. army.mil)*

## DRAFT ARMY GUIDEBOOK ON CONTRACTORS ACCOMPANYING THE FORCE IS AVAILABLE
OASA(ALT), JULY 15, 2003
A draft *Contractors Accompanying the Force Guidebook* (also sometimes called *Contractors on the Battlefield*) is now available at http://dasapp.saalt.army.mil/Ind_base_policy/ SAALPP_index.htm. Its purpose is to facilitate getting consistent contractor deployment information into Army contracts. It consolidates information and answers to common questions from many sources, including "draft" regulations and message traffic. It also provides resources and "template" scope of work language that could be used or tailored in your contracts. We also continue to work on both an Army and DoD contract clause. The Army clause should be published as an interim rule in the *Federal Register* by the end of August 2003. An article on this subject is also scheduled for publication in an upcoming issue of *Army AL&T* magazine.

*(Sharon Wisniewski/DSN 664-7142, sharon.wisniewski@saalt. army.mil)*

## PURCHASE OF ITEMS TYPICALLY RESERVED FOR FEDERAL PRISON INDUSTRIES
The Office of the Director, Defense Procurement and Acquisition Policy (DPAP), has published guidance highlighting those Federal Acquisition Regulation (FAR) and Defense Federal Acquisition Regulation Supplement (DFARS) changes that allow increased competition and provide additional small business opportunities when purchasing items typically reserved for Federal Prison Industries, Inc. Provide any comments to the current DFARS clarifications by accessing the DPAP Web Site at http://www.acq.osd.mil/dpap/ policy/dfarspubliccomments.htm. Refer questions to either Susan Schneider at susan.schneider@osd.mil or Philip Degen at philip.degen@osd.mil.

# CONFERENCES, WORKSHOPS & SYMPOSIA

## INTERSERVICE/INDUSTRY TRAINING, SIMULATION & EDUCATION CONFERENCE (I/ITSEC 2003)
The Interservice/Industry Training, Simulation & Education Conference (I/ITSEC 2003) will be held Dec. 1-4, 2003, in Orlando, Fla. Don't miss this 25-year anniversary event, which represents the premier annual conference for the simulation, training, and education communities of industry, government, and education. The I/ITSEC promotes cooperation among the armed services, industry, academia, and various government agencies in pursuit of improved training and education programs, identification of common issues, and development of multi-Service programs. I/ITSEC also promotes the use of technology that will enable the services to better and more efficiently train soldiers, sailors, airmen, and marines to enhance their readiness to go in harm's way. This year's conference theme will be *25 Years: Enhancing Warfighter Performance Through Advanced Learning Technology*.

To learn more about the conference or register, visit the conference Web site at http://register.ndia.org/interview/register.ndia?#December2003.

# Defense Acquisition University Regional Deans

## CAPITAL AND NORTHEAST REGION

John T. "Tim" Shannon, Dean of Faculty, Defense Systems Management College (DSMC), Fort Belvoir, Va., was named Dean, Defense Acquisition University (DAU) Capital and Northeast Region, effective Sept. 4, 2001. Shannon has served as Dean of Faculty since May 8, 1998. He first joined the DSMC faculty in February 1991 after 21 years' military service with Department of Navy. During his DSMC tenure, he served as an instructor in the Funds Management Department, and went on to assume increased levels of responsibility as Business Department Scheduler; Department Chair, Funds Management Department; and Associate Dean of Faculty. A graduate of the U.S. Naval Academy, Shannon holds a master's in business administration from the Naval Postgraduate School.

## MID-ATLANTIC REGION

Barbara Smith was named Dean, DAU Mid-Atlantic Region, Patuxent River Naval Air Station, Patuxent River, Md., effective Sept. 24, 2001. Prior to joining DAU, Smith was the V-22 "Osprey" Deputy Program Manager at Naval Air Systems Command (NAVAIR), Patuxent River. Smith began her federal career as a Reliability Engineer on avionics and propulsion systems for the F-18 A/B program at NAVAIR. In 1978, she moved to Sikorsky Aircraft Company and helped develop the LAMPS Mark III Life Cycle Cost program, followed by an assignment as Proposal Manager for the SH-60F helicopter. Returning to NAVAIR, she spent five years in the AV-8B Program (PMA-257), guiding the development and transition of the AV-8B for the U.S. Marine Corps Fleet Marine Force.

## SOUTH REGION

James L. "Jim" McCullough II was named Dean, DAU South Region, Huntsville, Ala., effective Oct. 22, 2001. McCullough has held a wide diversity of acquisition leadership positions in both government and industry, spanning a 32-year career. He came to DAU from E-OIR Measurements, Inc., where he served as President and Chief Operating Officer since July 1999. He was also a senior consultant at E-OIR, supporting major customer programs for sensor science, systems acquisition, systems integration and advanced learning studies. Prior to joining E-OIR, he held key positions at Nichols Research Corporation from 1990 to 1999, including Corporate Vice-President and Director for Corporate Horizontal Integration of Command, Control, Communications, Computers and Intelligence (C4I); Director for the Joint Test and Evaluation program; and Business Unit leader for Defense Systems Integration. In 1990, McCullough retired from the U.S. Army where he held various infantry field assignments as well as program management positions that directly contributed to the development of advanced technology. He holds an engineering degree from the U.S. Military Academy and a master's in procurement from Florida Institute of Technology.

## MIDWEST REGION

Jerry Emke was appointed Dean, DAU Midwest Region, Wright-Patterson AFB, Ohio, effective Oct. 7, 2001. Emke joined the University from his previous assignment as Deputy Commander of the Defense Contract Management Command Agency West (DCMAW), Lockheed Martin, Sunnyvale, Calif., a position he assumed in December 1999. Emke began his federal career in 1981 as a Quality Assurance Intern, assuming increased levels of responsibility over the years as a Quality Assurance Specialist, Quality Program Manager, Director of Quality Assurance, International Quality Assurance Chief, Contracts Operations Examiner, Operations Group Leader, Technical Assessment Group Chief, and Deputy Commander. Emke holds a master's degree in industrial management from Central Michigan University and a bachelor's degree from Wayne State University.
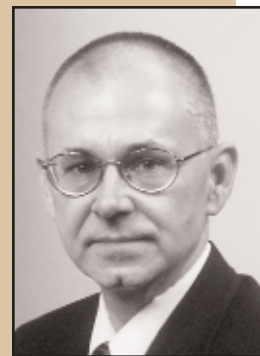
## WEST REGION

Retired Air Force Col. Andrew A. Zaleski II was named Dean, DAU West Region, San Diego, Calif., effective Oct. 7, 2001. He joined DAU West from his previous position at DAU Headquarters where he served as Director, Strategic Planning Action Group, Fort Belvoir, Va., since Jan. 4, 2001. Zaleski's first association with DAU-DSMC was an assignment as Dean and Air Force Element Commander at the Fort Belvoir main campus from 1991 to 1995. After his retirement from the Air Force in 1995, Zaleski joined private industry for the next five years, primarily as the Washington Area Operations Manager for TECOLOTE Research. He also served as a consultant to DynCorp and as the Vice President of New Business Development for the NEXT STEP Training Company. A graduate of the U.S. Military Academy, Zaleski holds two master's degrees from the University of Southern California.

# To be Released Soon!
# The DAU 2004 Defense Acquisition University Catalog
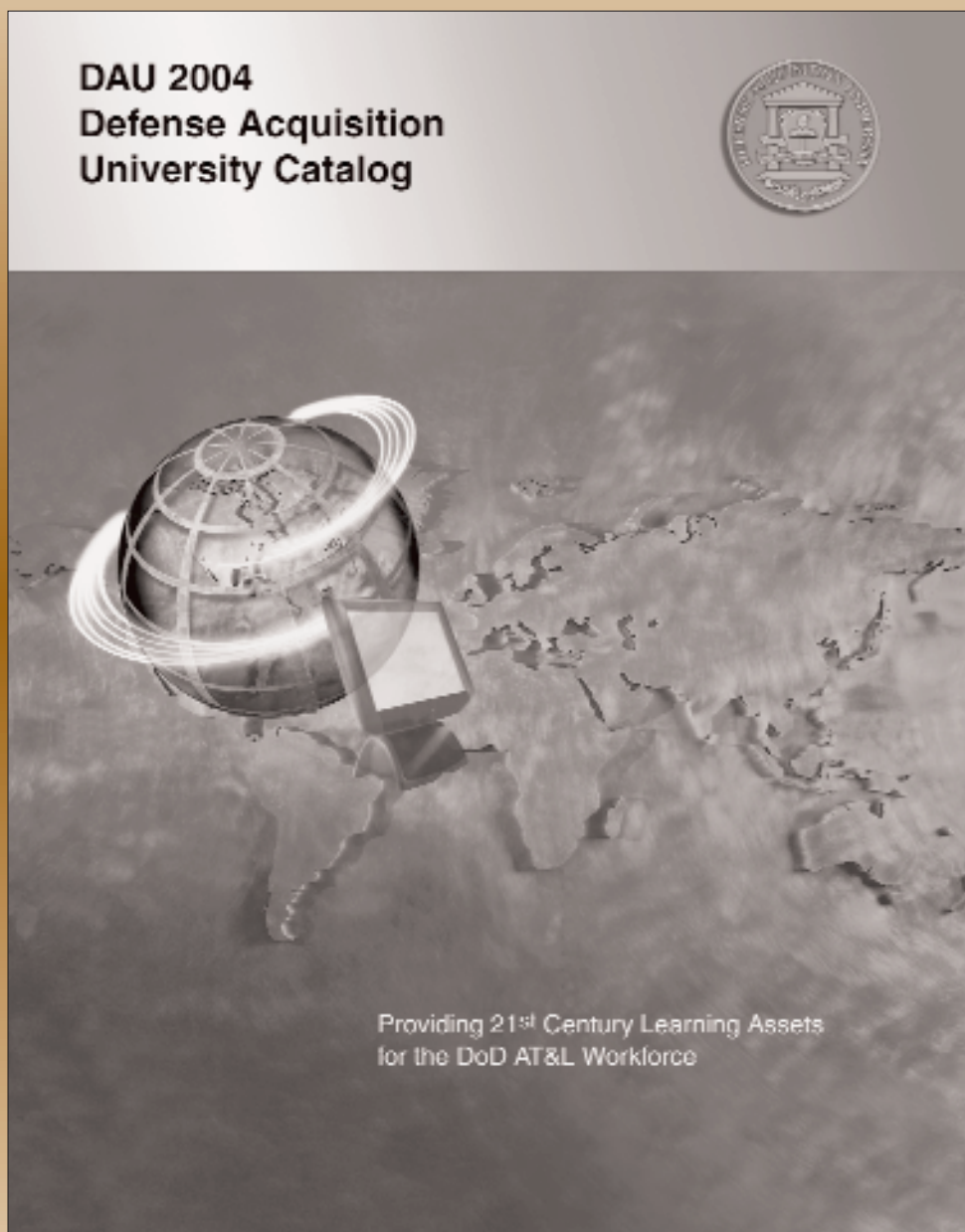
*Available in Hard Copy and Online—
Watch the DAU Web site at
http://www.dau.mil for final release dates.*

# DAU Guidebooks Available
## At No Cost to Government Employees

### A COMPARISON OF THE DEFENSE ACQUISITION SYSTEMS OF AUSTRALIA, JAPAN, SOUTH KOREA, SINGAPORE, AND THE UNITED STATES

**Author:** Stefan Markowski     **Editor:** Tony Kausal
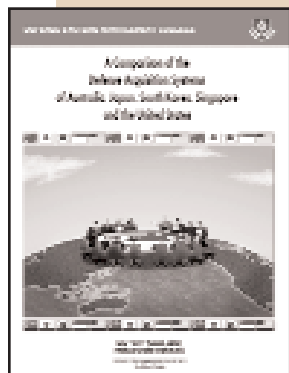
This guidebook describes the national armament systems of Australia, Japan, South Korea, Singapore, and the United States. Beginning with an introduction to the political environment, the acquisition organizations, systems, and processes involved, Kausal and Markowski describe the effects of differences in national culture and traditions, time zones, currencies, fiscal year schedules, and language barriers. Tying these differences to each nation's national armament system, the authors make the case that international armaments cooperation is a difficult but rewarding challenge.

**Online**

*http://www.dau.mil/pubs/misc/acq-comp-pac00.asp*

**Printed Copy**

To request a printed copy of *A Comparison of the Defense Acquisition Systems of Australia, Japan, South Korea, Singapore, and the United States,* choose one of three options: 1) Fax a written request to the DAU Publications Distribution Center at (703) 805-3726; 2) mail your request to Defense Acquisition University, Attn: AS-CI, 9820 Belvoir Road, Suite 3, Fort Belvoir VA 22060-5565; or 3) e-mail *jeff.turner@dau.mil.*

### ACQUISITION GUIDE FOR INTERACTIVE ELECTRONIC TECHNICAL MANUALS

This guidebook is designed as the primary desk reference for acquisition personnel who must acquire, develop, deliver, and manage Interactive Electronic Technical Manuals (IETMs). It incorporates the status of existing/planned DoD and Service-unique policy guidance, discusses current and projected technologies related to the production of IETMs, analyzes the relationships between IETMs and training, and addresses delivery vehicles, including the World Wide Web.

**Online**

*http://http://www.dau.mil/pubs/misc/ietm.asp*

**Printed Copy**

To request a printed copy of *Acquisition Guide for Interactive Electronic Technical Manuals* (September 1999), choose one of three options: 1) Fax a written request to the DAU Publications Distribution Center at (703) 805-3726; 2) mail your request to Defense Acquisition University, Attn: AS-CI, 9820 Belvoir Road, Suite 3, Fort Belvoir VA 22060-5565; or 3) e-mail *jeff.turner@dau.mil.*

### INCENTIVE STRATEGIES FOR DEFENSE ACQUISITIONS GUIDE

*Printed on behalf of the Office of the Deputy Under Secretary of Defense for Acquisition Initiatives by the Defense Acquisition University Press*

Incentives should exist in every business arrangement because they maximize value for all parties. DoD needs to adopt strategies that attract, motivate, and reward contractors to encourage successful performance. Using commercial practices will enhance DoD's ability to attract nontraditional contractors. This guide amplifies existing policy regarding use of incentives in defense acquisitions. It explores cost-based and non-cost-based incentive strategies. It clearly defines use of performance objectives or product functionality vs. detailed requirements to seek best value acquisitions. It answers these questions:

- Why are we concerned with contractual incentives?
- What elements contribute to an effective incentive strategy?
- How can we build and maintain an effective environment for a successful business relationship?
- How can we build the acquisition business case?
- How can we build an incentive strategy that maximizes value?

**Online**

*http://www.dau.mil/pubs/misc/incentive.asp*

**Printed Copy**

To request a printed copy of *Incentive Strategies for Defense Acquisitions* (April 2001), choose one of three options: 1) Fax a written request to the DAU Publications Distribution Center at (703) 805-3726; 2) mail your request to Defense Acquisition University, Attn: AS-CI, 9820 Belvoir Road, Suite 3, Fort Belvoir VA 22060-5565; or 3) e-mail *jeff.turner@dau.mil.*
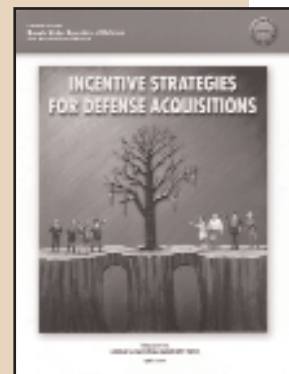
# Acquisition Technology & Logistics Excellence

An Internet Listing Tailored to the Professional Acquisition Workforce

## Surfing the Net

### Department of Defense

**Under Secretary of Defense (Acquisition, Technology and Logistics) (USD[AT&L])**
http://www.acq.osd.mil/
ACQWeb offers a library of USD(AT&L) documents, a means to view streaming videos, and jump points to many other valuable sites.

**Director, Defense Procurement and Acquisition Policy (DPAP)**
http://www.acq.osd.mil/dpap
Procurement and Acquisition Policy news and events; reference library; DPAP organizational breakout; acquisition education and training policy and guidance.

**DoD Inspector General**
http://www.dodig.osd.mil/pubs/index.html
Search for audit and evaluation reports, Inspector General testimony, and planned and ongoing audit projects of interest to the acquisition community.

**Deputy Director, Systems Engineering, USD (AT&L/IO/SE)**
http://www.acq.osd.mil/io/se/index.htm
Systems engineering mission; Defense Acquisition Workforce Improvement Act information, training, and related sites; information on key areas of systems engineering responsibility.

**AT&L Knowledge Sharing System (Formerly Deskbook)**
http://deskbook.dau.mil/jsp/default.jsp
Automated acquisition reference tool covering mandatory and discretionary practices.

**Defense Acquisition History (DAH) Project**
http://www.army.mil/cmhpg/acquisition/acqhome.htm
The DAH Project is a multi-year program to produce a detailed history of defense acquisition since 1947, to be published in six volumes. The site features a quarterly online newsletter, project status announcements, acquisition history links, and contact information.

**Defense Acquisition University (DAU)**
http://www.dau.mil
DAU Course Catalog, *Program Manager* magazine and *Acquisition Review Quarterly* journal; course schedule; policy documents; guidebooks; and training and education news for the Defense Acquisition Workforce.

**Defense Acquisition University Continuous Learning Courses**
http://www.dau.mil/registrar/apply.asp
Take DAU courses online at your desk, at home, at your convenience!

**Army Acquisition Support Center**
http://asc.rdaisa.army.mil
News; policy; publications; personnel demo; contacts; training opportunities.

**Assistant Secretary of the Army (Acquisition, Logistics & Technology)**
https://webportal.saalt.army.mil
News, ACAT Listing, PEO-PM Listing, Army Transformation, links to Army directorates and major programs.

**Navy Acquisition Reform**
http://www.ar.navy.mil
Acquisition policy and guidance; World-class Practices; Acquisition Center of Excellence; training opportunities.

**Navy Acquisition, Research and Development Information Center**
http://nardic.onr.navy.mil
News and announcements; acronyms; publications and regulations; technical reports; "How to Do Business with the Navy"; much more!

**Naval Sea Systems Command**
http://www.navsea.navy.mil
Total Ownership Cost (TOC); documentation and policy; Reduction Plan; Implementation Timeline; TOC reporting templates; Frequently Asked Questions.

**Navy Acquisition and Business Management**
http://www.abm.rda.hq.navy.mil
Policy documents; training opportunities; guides on areas such as risk management, acquisition environmental issues, past performance, and more; news and assistance for the Standardized Procurement System (SPS) community; notices of upcoming events.

**Navy Best Manufacturing Practices Center of Excellence**
http://www.bmpcoe.org
A national resource to identify and share best manufacturing and business practices being used throughout industry, government, and academia.

**Naval Air Systems Command (NAVAIR)**
http://navair.navy.mil
Provides advanced warfare technology through the efforts of seamless, integrated, worldwide network of aviation technology experts.

**Space and Naval Warfare Systems Command (SPAWAR)**
https://e-commerce.spawar.navy.mil
Your source for SPAWAR business opportunities, acquisition news, solicitations, and small business information.

**Joint Interoperability Test Command (JITC)**
http://jitc.fhu.disa.mil
Policies and procedures for interoperability certification. Access to lessons learned; link for requesting support.

**Air Force (Acquisition)**
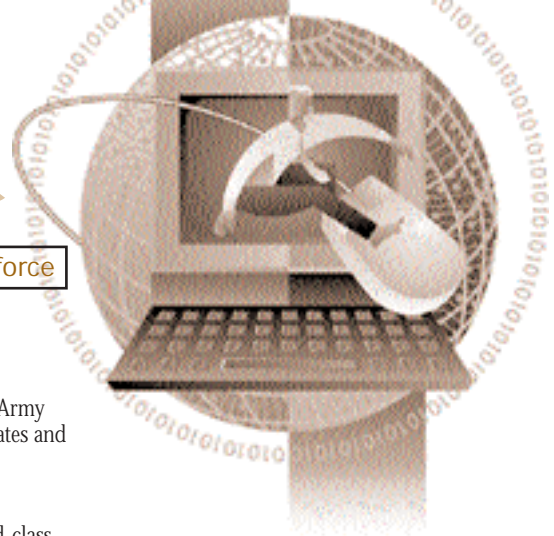http://www.safaq.hq.af.mil/
Policy; career development and training opportunities; reducing TOC; library; links.

**Air Force Materiel Command (AFMC) Contracting Laboratory's FAR Site**
http://farsite.hill.af.mil/
FAR search tool; *Commerce Business Daily* Announcements (CBDNet); Federal Register; Electronic Forms Library.

**Defense Systems Management College (DSMC)**
http://www.dau.mil
DSMC educational products and services; course schedules; job opportunities.

**Defense Advanced Research Projects Agency (DARPA)**
http://www.darpa.mil
News releases; current solicitations; "Doing Business with DARPA."

**Defense Information Systems Agency (DISA)**
http://www.disa.mil
Structure and mission of DISA; Defense Information System Network; Defense Message System; Global Command and Control System; much more!

**National Imagery and Mapping Agency**
http://www.nima.mil
Imagery; maps and geodata; Freedom of Information Act resources; publications.

**Defense Modeling and Simulation Office (DMSO)**
https://www.dmso.mil/public
DoD Modeling and Simulation Master Plan; document library; events; services.

**Defense Technical Information Center (DTIC)**
http://www.dtic.mil/
Technical reports; products and services; registration with DTIC; special programs; acronyms; DTIC FAQs.

**Defense Electronic Business Program Office (DEBPO)**
http://www.defenselink.mil/acq/ebusiness/
Policy; newsletters; Central Contractor Registration; Assistance Centers; DoD EC Partners.

**Open Systems Joint Task Force**
http://www.acq.osd.mil/osjtf
Open Systems education and training opportunities; studies and assessments; projects, initiatives and plans; reference library.

**Government-Industry Data Exchange Program (GIDEP)**
http://www.gidep.corona.navy.mil
Federally funded co-op of government-industry participants, providing an electronic forum to exchange technical information essential to research, design, development, production, and operational phases of the life cycle of systems, facilities, and equipment.

# Acquisition Technology & Logistics Excellence

## An Internet Listing Tailored to the Professional Acquisition Workforce

### Surfing the Net

## Federal Civilian Agencies

**Acquisition Reform Network (ARNET)**
http://www.arnet.gov/
Virtual library; federal acquisition and procurement opportunities; best practices; electronic forums; business opportunities; acquisition training; Excluded Parties List.

**Committee for Purchase from People Who are Blind or Severely Disabled**
http://www.jwod.gov
Provides information and guidance to federal customers on the requirements of the Javits-Wagner-O'Day (JWOD) Act.

**Federal Acquisition Institute (FAI)**
http://www.faionline.com
Virtual campus for learning opportunities as well as information access and performance support.

**Federal Acquisition Jump Station**
http://nais.nasa.gov/fedproc/home.html
Procurement and acquisition servers by contracting activity; CBDNet; Reference Library.

**Federal Aviation Administration (FAA)**
http://www.asu.faa.gov
Online policy and guidance for all aspects of the acquisition process.

**General Accounting Office (GAO)**
http://www.gao.gov
Access to GAO reports, policy and guidance, and FAQs.

**General Services Administration (GSA)**
http://www.gsa.gov
Online shopping for commercial items to support government interests.

**Library of Congress**
http://www.loc.gov
Research services; Congress at Work; Copyright Office; FAQs.

**National Technical Information Service (NTIS)**
http://chaos.fedworld.gov/onow/
Online service for purchasing technical reports, computer products, videotapes, audiocassettes, and more!

**Small Business Administration (SBA)**
http://www.SBAonline.SBA.gov
Communications network for small businesses.

**U.S. Coast Guard**
http://www.uscg.mil
News and current events; services; points of contact; FAQs.

**U.S. Department of Transportation MARITIME Administration**
http://www.marad.dot.gov/offices/cargo_perf.html
Provides information and guidance on the requirements for shipping cargo on U.S. flag vessels.

## Topical Listings

*Commerce Business Daily*
http://www.govcon.com/
Access to current and back issues with search capabilities; business opportunities; interactive yellow pages.

**DoD Specifications and Standards Home Page**
http://www.dsp.dla.mil
All about DoD standardization; key Points of Contact; FAQs; Military Specifications and Standards Reform; newsletters; training; nongovernment standards; links to related sites.

**Earned Value Management**
http://www.acq.osd.mil/pm
Implementation of Earned Value Management; latest policy changes; standards; international developments; active noteboard.

**Fedworld Information**
http://www.fedworld.gov
Comprehensive central access point for searching, locating, ordering, and acquiring government and business information.

**GSA Federal Supply Service**
http://pub.fss.gsa.gov
The No. 1 resource for the latest services and products industry has to offer.

**Joint Advanced Distributed Simulation (JADS) Joint Test Force**
http://www.jads.abq.com
JADS is a one-stop shop for complete information on distributed simulation and its applicability to test and evaluation and acquisition.

**MANPRINT (Manpower and Personnel Integration)**
http://www.MANPRINT.army.mil
Points of contact for program managers; relevant regulations; policy letters from the Army Acquisition Executive; as well as briefings on the MANPRINT program.

**Acquisition Community Connection (ACC)**
http://www.pmcop.dau.mil
Includes risk management, contracting, system engineering, total ownership cost (TOC) policies, procedures, tools, references, publications, Web links, and lessons learned.

If you would like to add your acquisition or acquisition and logistics excellence-related Web site to this list, please put your request in writing and fax it to Sylwia Gasiorek-Nelson, (703) 805-2917.

## Industry and Professional Organizations

**Association of Old Crows (AOC)**
http://www.crows.org
Association news; conventions, conferences and courses; *Journal of Electronic Defese* magazine.

**DAU Alumni Association**
http://www.dauaa.org
Acquisition tools and resources; government and related links; career opportunities; member forums.

**Aging Systems Sustainment and Enabling Technology (ASSET)**
http://catt.bus.okstate.edu
Collaborative effort between government, industry, and academia. Learn about ASSET and how to participate.

**Electronic Industries Alliance (EIA)**
http://www.eia.org
Government Relations Department; includes links to issue councils; market research assistance.

**International Society of Logistics**
http://www.sole.org/
Online desk references that link to logistics problem-solving advice; Certified Professional Logistician certification.

**National Contract Management Association (NCMA)**
http://www.ncmahq.org
"What's New in Contracting?"; educational products catalog; career center.

**National Defense Industrial Association (NDIA)**
http://www.ndia.org
Association news; events; government policy; *National Defense* magazine.

**Project Management Institute**
http://www.pmi.org
Program management publications, information resources, professional practices, and career certification.

**Software Program Managers Network**
http://www.spmn.com
Site supports project managers, software practitioners, and government contractors. Contains publications on highly effective software development best practices.

**Parts Standardization and Management Committee (PSMC)**
http://www.dscc.dla.mil/psmc
Collaborative effort between government and industry. Learn more about parts management and standardization through commonality of parts and processes.

DAU encourages the reciprocal linking of its Home Page to other interested agencies. Contact the DAU Webmaster at: **webmaster@dau.mil.**
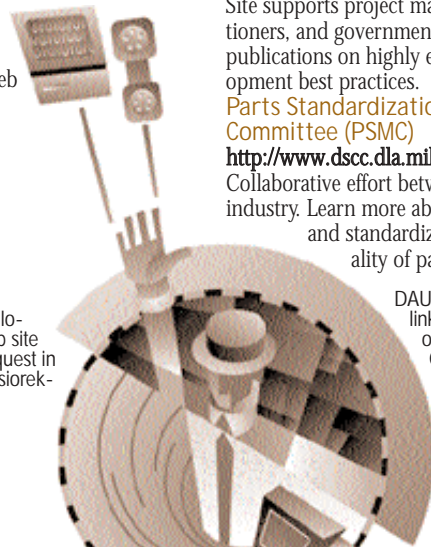
# Program Manager Writer's Guidelines in Brief (http://www.dau.mil/pubs/pm/articles.asp

## Purpose

The purpose of *Program Manager* Magazine is to instruct members of the DoD Acquisition, Technology & Logistics (AT&L) Workforce and Defense Industry on policies, trends, legislation, senior leadership changes, events, and current thinking affecting program management and defense systems acquisition, and to disseminate other information pertinent to the professional development and education of the DoD Acquisition Workforce.

## Subject Matter

Subjects may include, but are not restricted to, all aspects of program management; professional and educational development of DoD's AT&L Workforce; acquisition and logistics excellence; Defense industrial base; research and development; test and evaluation; modeling and simulation; commercial best business practices; and interviews with Government-Industry Defense executives.

*Program Manager* is not a forum for academic papers, fact sheets, technical papers, or white papers (these are typically recognized by their structured packaging, e.g., Introduction, Background, Discussion, Methodology, Recommendations, Conclusions). Those papers are more suited for DAU's journal, *Acquisition Review Quarterly*. *Program Manager* Magazine publishes, for the most part, feature stories that include real people and events. Stories that appeal to our readers—who are senior military personnel, civilians, and defense industry professionals in the program management/acquisition business—are those taken from real-world experiences vs. pages of researched information.

Good writing sounds like comfortable conversation. Write naturally and avoid stiltedness. Except for a rare change of pace, most sentences should be 25 words or less, and paragraphs should be six sentences. Vary your syntax. Avoid falling into the trap of writing one declarative sentence after another. Package your article with liberal use of subheads.

## Length of Articles

*Program Manager* is flexible regarding length, but articles most likely to be published are generally 2,000-3,000 words or about 10 double-spaced pages, each page having a 1-inch border on all sides. However, do not be constrained by length requirements; tell your story in the most direct way, regardless of length. Do not submit articles in a layout format, nor should articles include any footnotes, endnotes, or references. *Be sure to define all acronyms.*

## Photos and Illustrations

Articles may include figures, charts, and photographs. They must, however, be in a separate file from the article. Photos must be black and white or color. *Program Manager* does not guarantee the return of photographs. Include brief, numbered captions keyed to the photographs. Place a corresponding number on the lower left corner, reverse side of the photographs. Also, be sure to include the *source* of the photograph. *Program Manager* publishes no photos from outside the Department of Defense without express permission. Photocopies of photographs are not acceptable.

With the increase in digital media capabilities, authors can now provide digital files of photos/illustrations. (Our author guidelines at *http://www.dau.mil/pubs/pm/articles.asp* contain complete instructions on transferring these files.) Note that they must meet the following publication standards set for *Program Manager*: color and greyscale (if possible); EPS files generated from Illustrator (preferred) or Corel Draw (if in another format, provide program format as well as EPS file); TIFF files with a resolution of 300 pixels per inch measuring 5 inches by 7 inches; or other files in original program format (i.e., Powerpoint).

## Biographical Sketch

Include a short biographical sketch of the author(s)—about 25 words—including current position and educational background.

## Clearance

All articles written by authors employed by or on contract with the U.S. Government must be cleared by the author's public affairs or security office prior to submission. In addition, each author must certify that the article is a "Work of the U.S. Government." This form is found at the end of the PM Author Guidance. Click on "Copyright Forms" and print the last page only, sign, and submit with the article. Since all articles appearing in *Program Manager* are in the public domain and posted to the DAU Web site, no copyrighted articles will be accepted. This is in keeping with DAU's policy of widest dissemination of its published products.

### Submission Dates

| Issue | Author's Deadline |
|---|---|
| January-February | 1 December |
| March-April | 1 February |
| May-June | 1 April |
| July-August | 1 June |
| September-October | 1 August |
| November-December | 1 October |

## Submission Procedures

Articles (in MS Word) may be submitted via e-mail to *judith.greig@dau.mil* or via U.S. mail to: DAU PRESS, ATTN: JUDITH GREIG, 9820 BELVOIR RD, SUITE 3, FORT BELVOIR VA 22060-5565. For photos/illustrations accompanying your article, send us the original photos or follow the guidance under "Photos and Illustrations"—opposite column. All submissions must include the author's name, mailing address, office phone number (DSN and commercial), and fax number.

# PM

*PROGRAM MANAGER* **is getting a new look and a new name: watch for our first issue of** *DEFENSE AT&L* **to be published in January-February 2004.**